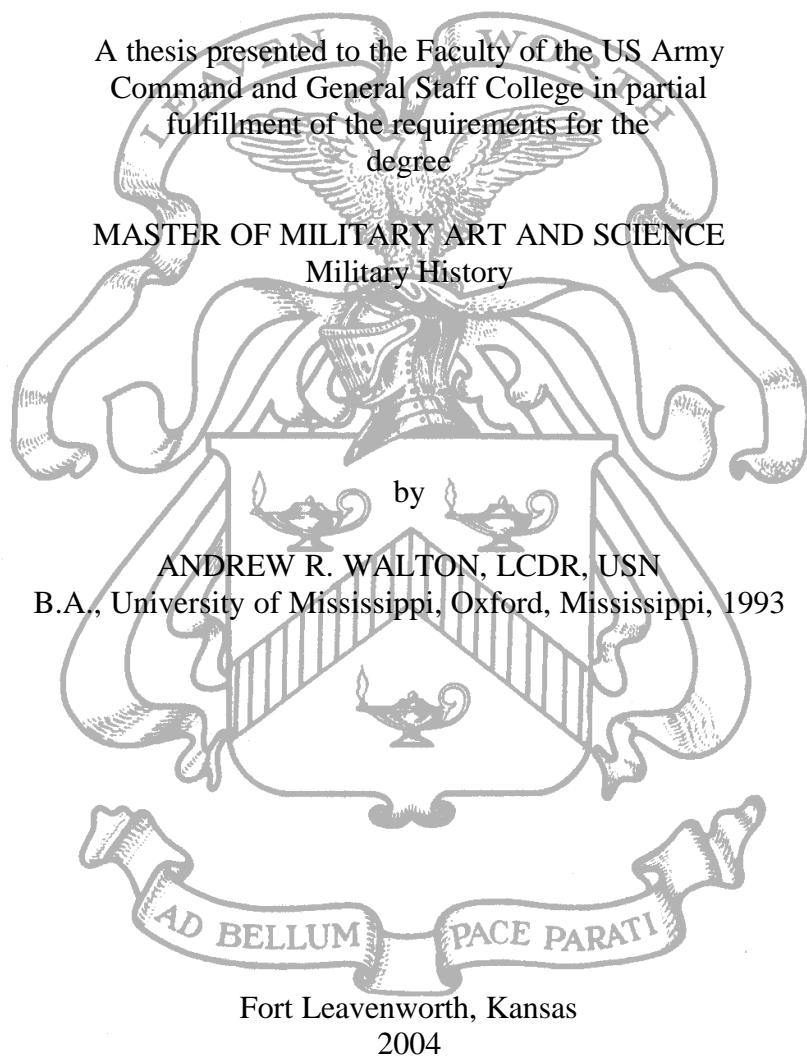


THE HISTORY OF THE AIRBORNE FORWARD AIR CONTROLLER  
IN VIETNAM



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MASTER OF MILITARY ART AND SCIENCE

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the US Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

## ABSTRACT

THE HISTORY OF THE AIRBORNE FORWARD AIR CONTROLLER  
IN VIETNAM, by LCDR Andrew R. Walton, 81 pages.

The US Department of Defense predicts that ground forces of the future will wage tomorrow's wars by replacing large numbers of personnel and organic firepower for advanced technology and superior maneuverability. Those forces must be prepared to face an unconventional enemy who will operate in small, lethal units interspersed with the civilian population rather than facing coalition forces with massed formations. This scenario of blurred lines of battle and difficulty determining friend from foe resembles very closely what the US military faced in Vietnam.

This paper will address the successes and failures of United States airborne forward air controllers (FACs), particularly in Vietnam, and whether combat lessons learned were passed from service to service or historically from conflict to conflict. The FAC mission has not significantly changed since the end of the Vietnam War, and a thorough study of operational and tactical lessons learned by those aircrew will significantly enhance today's FACs ability to find and destroy dispersed enemy forces in a wide array of environments.

## TABLE OF CONTENTS

	Page
MASTER OF MILITARY ART AND SCIENCE THESIS APPROVAL PAGE .....	ii
ABSTRACT.....	iii
ACRONYMS .....	vi
CHAPTER 1. AIRBORNE FACs AT WAR.....	1
Airborne Observer History .....	2
World War I: The Birth of a Concept.....	7
The Interwar Years .....	11
World War II: Lessons Learned and Forgotten.....	13
Korea: Mosquitoes Take Flight .....	15
CHAPTER 2. THE ADVISORY YEARS.....	23
US Air Force Counterinsurgency Operations .....	25
Farm Gate .....	27
O-1 Birddog .....	32
CHAPTER 3. THE SLOW-FAC AIR WAR.....	36
FAC Aircraft in Vietnam.....	36
USAF FAC Involvement in Vietnam.....	42
US Navy FAC Involvement.....	44
US Marine Corps FAC Involvement .....	47
FAC Operations 1965-1970.....	47
Out-of-Country Operations .....	48
Visual Reconnaissance .....	55
CHAPTER 4. THE FAST-FAC AIR WAR .....	59
US Marine Corps Fast-FAC: F9F Panther and OA-4 Skyhawk.....	60
Operation Commando Sabre: The Misty FAC .....	60
Stormy, Wolf, Tiger, and Night Owl: Phantom FACs .....	63
Vietnam Lessons Forgotten .....	66
CHAPTER 5. BEYOND VIETNAM: THE DEATH OF LARGE-SCALE AIRBORNE FAC .....	69
Marine Corps FACs After Vietnam.....	70
New FACs Emerge: Air Force A-10 and F-16.....	71

New FACs Emerge: Navy F-14 and F-18F .....	74
Special Operations Forward Air Control .....	75
The Next Test: Kosovo 1998 .....	75
The Global War On Terror .....	76
Where Do We Go From Here? .....	78
The Mission of Forward Air Control .....	78
The People of Forward Air Control .....	80
The Aircraft of Forward Air Control .....	81
Conclusion .....	82
 BIBLIOGRAPHY.....	84
 INITIAL DISTRIBUTION LIST .....	86
 CERTIFICATION FOR MMAS DISTRIBUTION STATEMENT .....	87

## ACRONYMS

AAA	Anti-Aircraft Artillery
AGCP	Air-Ground Cooperation Party
AGL	Above Ground Level
AGOS	Air-to-Ground Operations School
AI	Air Interdiction
ALO	Air Liaison Officer
AOC	Air Operations Center
ARVN	Army of the Republic of Vietnam
ASOC	Air Support Operations Center
ASRT	Air Support Radar Team
A-TAC	Airborne Tactical Air Controller
ATO	Air Tasking Order
BDA	Bomb Damage Assessment
BUPERS	Naval Bureau of Personnel
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance
CAS	Close Air Support
CENTCOM	Central Command
CCTS	Combat Crew Training Squadron
ComNavForV	Commander Naval Forces Vietnam
CSAR	Combat Search and Rescue
DASC	Direct Air Support Center
EWTG	Expeditionary Warfare Training Group

FAC	Forward Air Controller
FAC(A)	Forward Air Controller (Airborne)
FAE	Fuel Air Explosive
FCS	Future Combat System
FFAR	Folding Fin Aerial Rocket
FLIR	Forward Looking Infrared
FSCL	Fire Support Coordination Line
FM	Field Manual
GPS	Global Positioning System
HF	High Frequency
HUD	Heads Up Display
IADS	Integrated Air Defense System
MAACV-I	Military Assistance Advisory Group – Indochina
MAAC-V	Military Assistance Advisory Group – Vietnam
MACV	Military Assistance Command Vietnam
NVA	North Vietnamese Army
OSS	Office of Strategic Services
PEO	Program Evaluation Office
Psyops	Psychological Operations
ROE	Rules of Engagement
RWR	Radar Warning Receiver
SAC	Strategic Air Command
SAM	Surface to Air Missile
SCAR	Strike Coordination And Reconnaissance
SEAL	SEa Air Land

SF	Special Forces
SOF	Special Operations Forces
SOG	Studies and Observation Group
STRICOM	US Strike Command
TAC	Tactical Air Command
TAC(A)	Tactical Air Controller (Airborne)
TACP	Tactical Air Control Party
TACS	Tactical Air Control System
TASG	Tactical Air Support Group
TASS	Tactical Air Support Squadron
TFW	Tactical Fighter Wing
TPP	Tactics, Techniques, and Procedures
TPP	Tactics, Techniques, and Procedures
UDT	Underwater Demolition Team
UHF	Ultra High Frequency
USMC	United States Marine Corps
VC	Vietcong
VHF	Very High Frequency
VMC	Visual Meteorological Conditions
VNAF	Vietnamese Air Force
WP	White Phosphorous

## CHAPTER 1

### AIRBORNE FACs AT WAR

Only weeks into America's Global War on Terrorism, fought first in Afghanistan, the western media and their military analysts were shocked by what they called a bold, new kind of combined arms warfare. US ground forces waged their new war by forming into light, maneuverable units directing long-range airpower to overwhelm a non-linear guerilla force. B-52 Stratofortresses, B-1B Lancers, and B-2 Spirit stealth bombers, the mainstays of the United States strategic bombing force, surprisingly fought alongside the usual cast of tactical fighter-bomber close air support (CAS) aircraft by dropping precision weapons in close proximity to friendly forces directed by a host of ground and airborne forward air controllers (FACs).

However, this was not a new form of warfare. It mirrors literally thousands of previous events from past military conflicts. Those exact concepts of air-ground integration were formed, tested, and proven, over thirty years ago in the jungles of Southeast Asia. Yet they have mostly been forgotten since.

The Department of Defense sees conventional US and coalition ground forces of the future will wage tomorrow's wars replacing large numbers of personnel and organic firepower for advanced technology and superior maneuverability. Those forces must be prepared to face an unconventional enemy who will operate in small, lethal units interspersed with the civilian population rather than facing coalition forces with massed formations. This scenario of blurred lines of battle and difficulty determining friend from foe resembles very closely what the US military faced in Vietnam.

Tomorrow's ground forces will be successful against that enemy if they can capture and implement the combined arms lessons learned from the not-too-distant past. First, they must provide seamless training and integration of those ground units to rapid and precise inorganic firepower, and second, they must master secure and dependable Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) at the tactical level. The burden of integration will fall, as it has since World War I, on professional, dedicated aircrew who are willing to do anything necessary to help ground troops achieve their missions.

#### Airborne Observer History

Throughout World War I and II, ground forces relied on airborne forward observers, the direct descendant of the airborne FAC, attached to their units to combine surface-based and later, airborne effects from outside elements to complement their own organic fires. The complex geography of the Korean peninsula and the dense jungles of Vietnam hindered the ability of ground commanders to find targets, identify them, and direct attacks on their positions. Ground forces found they needed an "eye in the sky" to help with a myriad of tasks. They soon realized, almost by accident, that spotter aircraft in radio communications with those forces could locate and report the enemy, mark them for passing attack aircraft, or aid units by destroying targets themselves.

The airborne FAC of Vietnam could trace their ancestry back almost as far as the combat aircraft itself. Their mission, the aircraft they flew, and the integration between aircrew and soldier truly came of age over the jungles of Southeast Asia. They were forced to quickly transform their cold war based doctrine and tactics focused on attacking large formations of infantry and armor, to interdicting small, dispersed, well-camouflaged

units hidden under triple canopy jungle. They successfully shifted the preconceived notions of air-ground cooperation, tore down service rivalries, and developed new techniques to aid ground commanders from the sky that are still in place today.

These winged controllers thrived on the non-linear battlefields of Vietnam. The absence of a clearly defined enemy drove the theater rules of engagement (ROE) to require a FAC to control all ordnance dropped in South Vietnam. This was a far cry from the service specific “Route Package” concept underlined by the tight reign Washington held on interdiction airstrikes across North Vietnam. FACs and the CAS missions they controlled were the American military’s first large-scale attempt at joint airpower. Controllers from the Air Force, Marine Corps, and Navy consolidated tactics, techniques, and procedures (TTPs), leveraged each other’s lessons learned, and utilized CAS aircraft from all services to find and attack their elusive enemy with unprecedented success.

There were two types of FACs in Vietnam, the ground FAC, and airborne FAC, but their goals were the same. FACs translate the ground commander’s need of air support into lethal and nonlethal fires in close proximity to friendly forces. Joint Chiefs of Staff Publication 1 printed 1 December 1964 defines a FAC as “An officer (aviator) member of the Tactical Air Control Party (TACP) team who, from a forward position, controls aircraft engaged in close air support of troops.”<sup>1</sup> The FAC could serve as another FAC for the TACP or augment and extend the acquisition range of a forward air control party. FAC duties included detecting and destroying enemy targets, coordinating or conducting target marking, providing terminal control of CAS missions, conducting air reconnaissance, providing artillery and naval gunfire air spotting, providing radio relay for the TACP and ground FAC, and performing Bomb Damage Assessment (BDA).<sup>2</sup> The

key item that underlies the definition above, one which all FACs understand, is that they are there to support any action the ground commander wants as an extension of his TACP, or in Special Forces' (SF) case, the ground FAC.

The aircraft available to the airborne FAC in the 1960s and early 1970s, which included the O-1, O-2, and OV-10, were severely limited in the type and amount of ordnance that could be brought to bear over the battlefield. The FAC weapon of choice was CAS from fixed or rotary wing aircraft as well as surface based indirect fires, such as artillery, mortars, and naval gunfire. CAS in Vietnam was defined as “air action against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fires and movement of those forces.”<sup>3</sup>

CAS was constructed as a tactical level operation planned and executed to accomplish military objectives assigned to tactical units or task forces. The definition of CAS was broad in its meaning to allow ground commanders the right to place constraints on fires as each situation dictates. This approach allowed them a tighter reign when needed to minimize fratricide, while still leaving the ability to loosen restrictions in dire situations.

An example of this occurred on 22 March 1970, in the Mekong Delta. Navy propeller driven FAC OV-10 “Black Pony” aircraft were dispatched to help a Special Forces advisor and his Army of the Republic of Vietnam (ARVN) troops in dire need of air support. Lt (j.g.) Don Hawkins was the lead pilot of the mission.

He asked us to put a strike ten meters away. I said, “You don’t understand. This Zuni (rocket) has a fifty-foot fireball.”

They radioed back, “Go ahead and do it. Either you are going to knock them out or they are going to get us.” Fritz (Hawkins’ wingman) and I put the strike in.

When it was all over, they said, “You did super. You never came any closer than seven meters to us.”

I felt like saying, “You son of a bitch.” And I just laughed.<sup>4</sup>

FACs in Vietnam flew numerous types of aircraft including slow, propeller-driven O-1 Birddogs, to the state of the art F-4 Phantom jet attack aircraft. Their mission was the same: find the enemy and kill him. The problem was, in the O-1’s case, being too light to carry enough firepower to kill anything. It carried only white phosphorous (WP, or Willie Pete) marking rockets and utilized other CAS assets for target destruction. Other aircraft, such as the OV-10 Bronco and F-4 Phantom could bring along their own firepower, but usually not in enough quantities to last their entire mission. They too relied on outside support to bring the fight to the enemy.

Capitalizing on the inherent strengths and limitations of propeller-driven slow-FACs (O-1, O-2, and OV-10), and jet-powered fast-FACs (F9F, F-100, and F-4) took years to develop, and were quickly set aside after the War. The combination of the slow-FAC’s ability to find a hidden enemy and point it out to others, with the fast-FAC’s ability to quickly cover large areas in a high-threat environment, was an extremely lethal combination of airpower arrayed against enemy forces in the field.

For aircraft to deliver ordnance in close proximity to friendly forces the FAC had to know, to the maximum extent possible, where the strike’s weapons would impact. This was done by the FAC visually observing the target, seeing the delivering aircraft, assessing the aircraft’s nose position, and consenting to the pilot’s delivery by transmitting “Cleared Hot,” over the radio. Only then would the CAS aircrew release weapons. FACs used detailed visual descriptions, WP marking rockets, or artillery shells to direct the strike pilots onto the proper targets.

The conditions needed for CAS, as well as the procedures to implement them, have changed little since the first armed aircraft flight. Joint doctrine stated that the criteria for effective CAS as air superiority, suppression of enemy air defenses, target marking, favorable weather, prompt response, terminal controller and aircrew skill, appropriate ordnance, communications, and command and control. If a conventional Army maneuver element needed CAS, they turn to their TACP, located at all elements of maneuver from Battalion through Corps level. The TACP was a small unit attached to the ground element who provided technical expertise on the employment of air support, communications for directing CAS and immediate CAS, and assistance in requesting planned air sorties. Each TACP consisted of Forward Air Controllers and dedicated radio operators. In Army TACPs, FACs were commissioned Air Force fighter pilots.

Due to the close tie between aviation and ground forces in the United States Marine Corps (USMC), only commissioned Marine aviators were allowed to perform the mission of terminal aircraft control. This bond produced arguably the most concrete relationship between air and ground elements anywhere in the world. USMC FACs are former aviators, and have the prior experiences to “see the battlespace” from an aviator’s point of view. In addition, all Marines receive Infantry training before learning their own specialty, further tying the missions together.

In each squadron providing CAS missions, there were many previous ground FACs briefing missions and dropping the weapons in direct support, all who have the perspective of once having been the FAC on the ground. That tie between the organizations breeds familiarity within each element that overcomes the vast differences

between aviation and ground based units. It is a tie that has bound the Marine air-ground team since battles in Nicaragua early in the twentieth century.

In the SF community, due to the fewer numbers of personnel available and the highly specialized nature of their business, selected officer and enlisted operators were required to learn the FAC mission from scratch as a collateral duty. They provided all air and surface fire support for their small teams, painstakingly learning how to master controlling an utterly unfamiliar world. That world consists of immensely different aircraft employing vastly diverse ordnance. The SF ground FAC has the added job of folding the lethal and non-lethal effects of the entire air component into any situation that Special Forces see fit.

#### World War I: The Birth of a Concept

To understand the mindset of military planners and FAC aircrew in Vietnam, a brief history of how the FAC came to be an integral part of the war in Southeast Asia must be reviewed. Using powered aircraft as an instrument of battlefield intelligence began in World War I due to the ground commander's difficulty in surveying and interpreting the unfolding battlespace around them. Senior leaders commanded their forces well behind the front lines, tied to their intelligence and communications networks consisting of bulky field telephones and later, radiotelegraphs. Ground-based scouts and observers, aided by couriers, were the primary means of sending orders and receiving intelligence reports from the front. Impassable terrain, stalled front lines, and the unrelenting fire of trench warfare hampered these efforts. Compounding the situation was that artillery barrages easily cut field telephone lines, and exposed couriers were easy prey for enemy troops. A new means of battlefield intelligence was needed. The first

army to look to the skies for that answer was the French, who leveraged their past to solve the problem.

The French Army had used the balloon for airborne reconnaissance and artillery spotting during the Napoleonic Wars and later in the Franco-Prussian War. French planners reasoned powered aircraft, even though only a few years old, could strengthen the precedent set years earlier by the balloon. The first aircraft used in war were flimsy reconnaissance airplanes sent aloft with a crew of two, the pilot and the aerial observer. While the pilot flew the aircraft, the observer would sketch the battlespace below for the ground commander on a notebook. This information was used to make battlefield maps, a rare commodity at the time. Soon, aircrew took aloft cameras to further refine the maps being made, as well as give the ground commander a better feel for the terrain and enemy before him.

Aircraft technology advanced rapidly throughout the war. Observer aircrew saw firsthand the horrifying conditions of their comrades in the trenches, and it is not surprising they quickly took a more active role in combat. Aircraft were initially dispatched forward of the front line infantry to observe and record enemy units in preparation for hostilities, and once the action began, to direct artillery barrages on the opposing fortifications. Pilots and observers soon began taking the fight to the enemy themselves by carrying pistols to ward off other enemy planes, as well as bags of grenades and small mortar shells. They dropped these on the enemy trenches, mirroring what Italian aircraft had done in 1911 against the Turks in the Italo-Turkish War, which is still considered the first airstrike ever performed.

Most of the incidents of early CAS, then called “trench flights,” were done on the individual pilot’s own initiative. They occurred quite randomly and had very little tactical impact on battles.<sup>5</sup> However, there were problems. The intelligence gathered and reported by the aircrew was not always accurate, often leading ground commanders to question reports by the observers. There were many instances of observers understating sizes of formations by thousands, as well as misidentifying whole armies and their positions to their superiors. Even if the reporting was accurate, there were many problems relaying the information to superiors.

The easiest and most thorough way to provide situation reports was to land the aircraft near the unit’s headquarters and give the assessment to the commander personally. This method, while most suitable, was not often used due to battlefield conditions. Other means of communication were employed, including dropping weighted letters and firing colored flares to signal commanders. Airborne wireless telegraphs were utilized beginning in 1915 to communicate as well, but their weight and reliability were more of a hindrance than a large step forward for the observers.

But even with problems, the trained airborne observer provided essential information quicker than any other means at the time. No longer was the intelligence restricted to painstakingly slow ground communication routes. Enemy formations, complex trench lines, rear staging areas, and ammunition supply points were quickly mapped out, photographed, and the information air-dropped to commanders in the field.

1917 and 1918 saw the greatest technological leaps forward in aircraft production, combat capabilities, and overall functionality. Aircraft flight was only fifteen years old,

and the technology and ideas on how to implement them in combat would take some time to mature.

Only small numbers of pilots saw the need or desire for the detailed coordination of direct air support for infantry. The combined arms integrators of the time were still developing combined infantry and artillery tactics, and adding the mediocre firepower from aircraft just seemed to complicate the problem. Leadership on all levels were more interested in advancing doctrine and tactics combining infantry, artillery, and armor, than folding the lightly armed aircraft into the problem. Also, the prevalent thought at the time was that subordination of aviation assets to ground forces was not as rewarding as missions such as strategic bombing, which by doctrine encompassed strikes 20 miles behind the “crust,” or forward lines of troops. The coordination involved was much easier and the missions were seen by most as more important.

1917, quite late in the war, saw true realization by France and Germany in of the prospect of ground attack from aircraft in close proximity of friendly forces. Both sides saw the bombing and trench strafing more as a demoralizing action than one of trying to affect the battlespace by destruction. The unforeseen psychological impact of aircraft on the enemy was one of the main lessons learned from World War I, far outweighing the minimal destructive effects 10 pound bombs and 8-millimeter machine gun runs had on hardened trenches.<sup>6</sup> Nevertheless, aviators and ground forces gained many lessons from the First World War. Surprisingly, almost all were lost during the somewhat peaceful interwar period that followed.

### The Interwar Years

Between 1918 and 1939, aircraft technology progressed at amazing rates. Larger, more powerful engines and all-metal airframes gave aircraft performance that the World War I pilot could never have dreamed of. Air power doctrine, including the support of ground troops, progressed little. American planners, including Chief of Air Service for First Army, Col. William “Billy” Mitchell, recognized the need for air support for the Army, and acknowledged they would provide it if needed.

More emphasis was to be placed on deeper strikes (air interdiction). This was due to the accuracy of the aircraft bombing systems and the idea that the next battlefield would have fewer numbers of scattered troops near the front, with large staging areas in the rear. He believed these deep pockets of reinforcements and supplies would be a much more lucrative target than dispersed troops at the front, which could be attacked by artillery. Due to the integration issues, Mitchell saw CAS as a “special mission” to be given to a separate ground attack aviation branch.

This led to the first American ground attack unit, the 3rd Attack Group, which was formed in 1921.<sup>7</sup> Giving this specialized branch a specific mission, rather than leaving it as a subordinate task to general aviation squadrons, should have given American air forces the edge in the interwar period. The 1928 “Advanced Flying School Attack Aviation Text” showed the truth, stating that “experience proved that success could not be obtained by assigning [observation] airplanes to this dual role, as pilots would become so engrossed in attacking ground troops that they would neglect their primary mission of supplying information concerning enemy movements.”<sup>8</sup>

The constant vacillation by superiors on the need for close ground attack combined with the lack experience in the air services from World War I pilots, left the American air forces ill prepared to support ground troops at the outbreak of the war erupting in Europe.

The constant pull between strategic bombing and CAS proponents led to further distortion of the positions defining them. In a 1937 speech to the Army War College, Brig General Henry “Hap” Arnold, stated “Do not detach the air force to small commands where it will be frittered away in petty fighting. Hold it centrally and use it in its proper place; that is, where it can exert its power beyond the influence of your other arms, to influence general action rather than the specific battle.”<sup>9</sup> This set the stage for air support of American ground forces in World War II. In the end, scarce funds, lack of interest, and differing priorities buried the problem of air-ground integration.

The US Army Air Corps tactical aviation doctrine leading up to World War II was one of massing large formations of bombers to both directly and indirectly support ground troops.<sup>10</sup> The doctrine was one of theory, lacking much in practicality or practice. The establishment of an independent air arm was the ultimate goal of the doctrine writers of the time, not planning for the next war.

Subordinating sorties to directly support the land Army would never allow the clean break the Army Air Corps desired. So obviously, emphasis was placed on what would become to be known as “Strategic Bombing.” The commander of the Army Air Corps’ lone attack unit, Colonel Horace Hickam, who was chartered with development and implementation of air-ground coordination showed the divergence from the original concept by stating in 1934,

[I]t becomes evident attack is not a flying machine gun battalion or cavalry in the air any more than it is light artillery in the air. . . . The function of attack in the air force team is, in brief: To increase its relative strength in bombardment by destroying enemy bombardment; to provide protection to bombardment by destroying enemy pursuit; to neutralize anti-aircraft artillery defenses; and to reduce the general efficiency of the enemy air force by disruption and destruction of his base facilities.<sup>11</sup>

Students attending the Air Corps Tactical School at Maxwell Field in the late 1930s were placed into sections teaching bombardment, pursuit, attack, or observation. None of the sections were connected and there was no attempt to formulate how they could work in concert against an enemy.<sup>12</sup> Very little emphasis was placed on the lessons learned from the other services as well. The US Marine Corps, whose doctrinal aircraft mission statement was “direct support of ground forces,” and who had no desire to create its own air service, was able to concentrate all aircraft sorties on CAS, a feeling prevalent throughout Vietnam and today.<sup>13</sup>

#### World War II: Lessons Learned and Forgotten

Germany’s startling combined arms advance across France in 1939 was the needed catalyst the American forces to re-think airpower’s role in land warfare. The brilliant success of the Luftwaffe, especially their Stukas, led General Arnold to research and subsequently develop two Navy derived A-24 “Dauntless” dive-bombers groups. Also rushed into production was development of self-sealing fuel tanks, armored protection, and the 37-millimeter cannon.<sup>14</sup>

More importantly, across the services, it became apparent that a mix of strategic and tactical airpower would be needed to defeat the German war machine. The Army Air Corps and Navy began close coordination with British air and ground units, trying to quickly learn their combined arms integration techniques. The US Army decided to

mirror the British “Close Support and Bomber Control” which consisted of both air and ground liaisons attached to units in the field that evaluated, prioritized, and arranged CAS sorties.<sup>15</sup>

US combined arms testing was conducted in Ft. Benning, Georgia, from February to June of 1941. The tests included a wide variety of Army branches, including one armored division, two infantry divisions, several pursuit and light bombardment squadrons, a parachute battalion, and some cavalry units. The tests showed quite a difference between employing artillery and aircraft. The CAS sorties needed “more centralized control” than the artillery, and due to that reason, the “Air Support Control” section was formed to implement airborne firepower. Lessons learned from the integration resulted in “Training Regulation 52 (29 AUG 1941)”, which gave birth to the Air-Ground Cooperation Parties (AGCP).

These were the predecessors of the TACP of Vietnam and today. Inside the AGCP were Air Corps advisors who provided technical expertise on utilizing air support, effectively the first true FACs on the battlefield.<sup>16</sup>

The first Army Air Corps combat test of the concept came in the form of an experiment called “Rover Joe,” a fighter-bomber pilot who was used to control CAS aircraft in the 1943 Italian Campaign. From a nearby hill, he successfully employed strikes consisting of four aircraft every thirty minutes on enemy positions less than 1,000 meters from friendly troops with no friendly losses.<sup>17</sup>

The Marines, in their push westward in the Pacific, used ground FACs extensively in their dense jungle operations. On Bougainville, the front lines were impossible to map for air and artillery support. Front line Marines sent aloft weather balloons that rose

above the jungle for aerial observation aircraft to chart and photograph.<sup>18</sup> The battle for Okinawa saw the culmination of the battle proven mission of Navy-Marine Corps CAS. Trained ground troops asked for, received, and directed destruction from the air in close proximity to friendly troops in a responsive timeframe.

Across the theaters of war, the ground FAC, aerial observer, and CAS concepts were proven time and time again in combat. The training, technology, and know-how were in place to integrate airborne fires into ground forces' fire and maneuver, but it would take years for planners to realize the inherent strength of putting the controller into an aircraft. Controlling CAS aircraft from an airborne platform would not take place until the Korean War. But individual instances of success like Rover Joe and the observation aircraft of World War II who would locate targets outside of artillery range, then report it for destruction to other aircraft, would soon meld together with great success.

#### Korea: Mosquitoes Take Flight

In the fragile peace that followed, little changed in the implementation of CAS and reconnaissance aircraft. The structure under which the air forces were formed changed little as well. The newly formed United States Air Force made the Tactical Air Command (TAC) a major command directly under the Chief of Staff, USAF.<sup>19</sup> TAC's mission was to provide air cooperation to land, naval, and amphibious forces, but there were large differences in opinion in regards to the Air Force and Navy's philosophy on airpower.

By the beginning of the war, the Air Force believed in a "strategic first" approach, which called for gaining air superiority, attacking an enemy's war base, supplies, and reinforcements, then concentrating on the close battle. The Navy and Marine Corps'

opinion was quite different.<sup>20</sup> They too believed air superiority was needed, but that the close battle was more important than destroying the war base of the enemy.

Another factor was that the training of attack pilots was vastly different in the services. The Navy and Marine air focused on the strengths and weaknesses not just of themselves, but on the ground forces they were supporting. Numerous classes were devoted to visual identification and capabilities of enemy and friendly forces. The Air Force did not receive training in that detail.

Another difference was that Marine FACs were distributed from the division to battalion level. The Air Force provided one TACP per Army regiment. This meant Marine FACs were concentrated at the front lines with their troops, able to receive and accept air tasking directly from higher headquarters by radio. The Air Force FACs, on the other hand, were in the rear with the headquarters and used an airborne extension to their daylight operations by employing a small T-6 trainer aircraft, called a “Mosquito” to locate and guide CAS aircraft to their targets.

The Mosquito aircraft directed daylight-only strikes found either by themselves or the ground FACs by talking the strike pilots onto the target visually, firing 2.36-inch WP marking rockets themselves, or coordinating artillery smoke shells as a common reference point. Thus began the first widespread FAC program ever developed. It began soon after the war’s first shot was fired as a small ad-hoc unit, but swiftly became one of the largest successes in the Korean Air War. It took just six months in combat to organize the unit and prove its procedures under fire.<sup>21</sup>

All Mosquito pilots were required to have extensive experience flying close-support sorties themselves.<sup>22</sup> Air and ground planners used visually significant ridgelines

near the effective range of corps artillery as the “bomb line”. This was a coordination measure put in place ensuring aircraft operating short of the line to be under positive control of a FAC due to the proximity (usually five to eight miles) of the friendly front lines.<sup>23</sup> The Air Force and Army agreed that CAS short of that line was to be only undertaken as a last resort, and only when friendly and enemy positions were clearly evident. Artillery was easier to coordinate and would be the priority, unless situations dictated the target be hit from the air.<sup>24</sup>

Air Force ground FACs, tied to bulky jeep mounted (and powered) radios, soon became overshadowed by their more maneuverable airborne contemporaries. Ground FAC radios were not reliable due to their constant jarring traveling on Korean dirt roads, and their unarmored jeeps were easy targets if pushed close to the front lines.

One instance of the necessity for airborne FACs came when the ground FACs of the 24th Division, in retreat, could not coordinate the air support they needed. They were unable to locate targets for and direct fast jet-powered attack aircraft, which had only 20 minutes of time on station, against them. Lt. Col. Stanley P. Latiolas, the Fifth Air Force operations officer, conceived of a plan utilizing his T-6s to find viable targets, stack strike aircraft overhead, and control their ordnance by visually describing the area to the strikers.

On 9 July 1950, Mosquito aircraft were first used to direct airstrikes. Two FACs were able to arrive in the target area ahead of the strike aircraft and control 10 F-80 strike aircraft each onto enemy positions. On the next day, the same aircrew controlled more F-80s resulting in seventeen North Korean tanks destroyed. The comment was made that it was the “best day in Fifth Air Force history.”<sup>25</sup>

The Korean-era airborne FACs were first known as airborne tactical air controllers (A-TACs), a term derived from Field Manual (FM) 31-35 and the Air Force doctrine of the day.<sup>26</sup> But they performed all functions and missions associated with the airborne FAC, a term that will be used throughout this work for clarification purposes. The command structure, procedures, and communication channels used by the Mosquitoes were anything but doctrinal. One of the first controllers stated, “There was no definite system. The only thing we had was an aeronautical chart and a radio. . . . We went into the back of the enemy lines and reconnoitered the roads. . . . We saw some tanks, got on each radio channel until . . . any fighter heard us and we would give them the target.”<sup>27</sup>

The procedures used by the Mosquitoes vary little from the procedures used in Vietnam and today. The five tasks of an airborne controller were: traffic control, or the safe entry, use, and exit of strike aircraft; ordnance selection, or matching the appropriate ordnance to the right target; target discrimination, or broadcasting the target’s location to CAS aircraft; target marking, or placing visually significant ordnance near the target for visual acquisition; and bomb damage assessment.

The operations quickly became a joint evolution, involving Navy and Marine Corps CAS sorties. The Navy and Marine aircrew even began controlling aircraft alongside the Mosquitoes, learning the trade quickly from the seasoned aviators.

Korea was also the first use of FACs participating in “special missions.” Aircrew set the stage for later Special Forces aircraft by performing reconnaissance missions identifying guerilla units, flying unescorted missions deep behind enemy lines to gain intelligence, dropping leaflets, and pushing flights into twilight hours to disrupt the

nighttime North Korean resupply efforts. They also showed their flexibility by covering an airdrop by the 187 Regimental Combat Team and coordinating psychological operations (Psyops) loudspeaker aircraft broadcasting to enemy positions.<sup>28</sup>

To further integrate into Army operations, individual Mosquitoes were assigned Army observers who flew in the back seats of their T-6s. The observers rode along bringing a “soldier’s view” of the battlefield to the Air Force pilots.<sup>29</sup> Also adding to the cooperation was the assignment of Mosquitoes on 12 August to individual divisions for support. They assumed callsigns concurrent with their division and operated exclusively in their operations area.<sup>30</sup> This worked well in that the FACs became very familiar with the environment in which they and the troops they were covering operated. The slightest terrain disturbance, such as a worn path or increasing number of cooking fires in a village, stood out in the controller’s mind as possible enemy activity to be investigated.

The aircrew flying missions were convinced that the ideal FAC aircraft operated at low altitude and slow speed, provided good visibility for the pilot, had long endurance, high mobility, and a robust communications package. This line of thought excluded the jet-powered fighter as a FAC platform, a sentiment that would carry over for years to come. Interestingly, the Air Force asked if the Mosquitoes would like to switch to the L-19, later designated the O-1 Birddog, which FACs used extensively throughout the air war in Vietnam. But the aircrew turned it down in 1951, noting it was too susceptible to ground fire.<sup>31</sup>

After the end of the Korean War, the Mosquito squadrons, TACPs and the Tactical Air Control System (TACS) that sustained them quickly disestablished. As was the story of CAS after World War II; the idea of FACs, even though battle tested and

proven, was seen as a temporary fix for a problem that would never happen again. In air-ground cooperation conferences after the war, the need was recognized for formally establishing joint doctrine patterned after the system perfected by the Mosquitoes in the last month of the Korean War.<sup>32</sup> The increasing sophistication of surface to air threats drove critics to assert that the slow moving controllers of the past would need to be replaced by jet-powered FACs of the future. General Ridgeway, who was Commanding General of Eighth Air Force and one of the largest war-time proponents of the Mosquitoes, ironically stated in 1955 that due to the failure to draft a joint Army-Air Force statement on CAS post conflict, the Korean War's doctrine for CAS was void. All money, personnel, and equipment for sustaining FAC operations immediately disappeared.

The final nail in the FAC's coffin at this time was the United States Strike Command (STRICOM) manual on joint task force operations released after Korea that omitted airborne FACs from joint doctrine altogether. It stated "Tactical Air strikes may be controlled visually by a TACP or electronically by an air support radar team (ASRT)." <sup>33</sup> In a later version of the manual, FACs were included, but were required to have two fighter pilots aboard and were envisioned to only be used sparingly.<sup>34</sup> In the end, the United States Air Force had basically the same FAC doctrine in 1966 that it had in 1946, a problem that would present itself not far from the Korean Peninsula a few short years later.

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<sup>1</sup>Joint Chiefs of Staff Pub 1, *Dictionary of US Military Terms for Joint Usage* (Washington, D.C., 1 December 1964).

<sup>2</sup>Ibid.

<sup>3</sup>Ibid.

<sup>4</sup>Kit Lavell, *The Flying Black Ponies* (Annapolis, MD: Naval Institute Press, 2000), 81.

<sup>5</sup>Gary R. Lester, *Mosquitoes to Wolves: The Evolution of the Airborne Forward Air Controller* (Maxwell AFB, AL: Air University Press, 1997), 4.

<sup>6</sup>Ibid.

<sup>7</sup>Ibid, 7.

<sup>8</sup>Ibid.

<sup>9</sup>Brig Gen. Henry Arnold, “The Air Corps” (address to the Army War College, US Military History Institute, Carlisle Barracks, PA, 8 October 1937), 10.

<sup>10</sup>Williamson Murray and Allan R. Millet, *Military Innovation in the Interwar Period* (Cambridge, UK: University Press, 1996), 173.

<sup>11</sup>Lt Col Horace M. Hickam, “Why Attack Aviation?” *US Air Services*, February 1934, 16.

<sup>12</sup>Murray and Millet, *Military Innovation*, 174.

<sup>13</sup>US Marine Corps, *Small Wars Manual* (Washington, DC, 1940), Section VI, 17.

<sup>14</sup>Lester, 8.

<sup>15</sup>Ibid.

<sup>16</sup>Ibid., 9.

<sup>17</sup>Ibid., 10.

<sup>18</sup>Maj. David C. Fuquea, “Bougainville: The Amphibious Assault Enters Maturity,” *Transformation in the Shadow of Global Conflict* (US Army Command and General Staff College, Ft Leavenworth, KS, July 2003), 279.

<sup>19</sup>*History of Tactical Air Command*, vol. 1, 1 July-30 November 1950, 1-12; and CONARC Reg. No.26-1, *Organization-Tactical Air Command*, 11 August 1950.

<sup>20</sup>Lester, 17.

<sup>21</sup>J. Farmer and M. J. Strumwasser, *The Evolution of the Airborne Forward Air Controller: An Analysis of Mosquito Operations in Korea*, RAND Report RM-5430PR (Santa Monica, CA:RAND, October 1967), iii.

<sup>22</sup>Ibid., 33.

<sup>23</sup>Robert F. Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the US Air Force, 1907-1964* (Maxwell AFB, AL: Air University Press, 1971), 182-203.

<sup>24</sup>Ibid.

<sup>25</sup>*History of the 6417th Tactical Control Squadron (Airborne)* (Washington, D.C.: Office of Air Force History, July 1950.)

<sup>26</sup>Lester, 46.

<sup>27</sup>Robert F. Futrell, *The US Air Force in Korea* (New York: Duell, Sloan, and Pearce, 1961), 83.

<sup>28</sup>History of the 6417th, 3.

<sup>29</sup>Lester, 39.

<sup>30</sup>Ibid., 40.

<sup>31</sup>History of the 6417th.

<sup>32</sup>Lester, 75.

<sup>33</sup>“Joint Task Force Operations,” (Draft), (McDill AFB, FL: Headquarters, US Strike Command, 15 April 1964), 52.

<sup>34</sup>Ibid.

## CHAPTER 2

### THE ADVISORY YEARS

American involvement in Vietnam began in Saigon in 1950 with the establishment of Military Assistance Advisory Group-Indochina (MAACV-I), which was formed to help French forces stop Ho Chi Minh's campaign of communist liberation throughout South Vietnam. France's abrupt withdrawal from Indochina in 1954 left a sizeable power vacuum in the region, but a small contingent of American advisors remained. The French colonialists had not only failed to defeat the Viet Minh insurgents of North Vietnam, but regrettably failed to establish genuine leadership in the South Vietnamese government. The fragile, anti-communist administration created by the Geneva Accord was headed by the autocratic Ngo Dinh Diem, who was more interested in his people's loyalty to the regime than stability or security in the region. This led to general distrust of the average South Vietnamese in their government, as well as embedding a low priority of involvement in United States relations towards Saigon.<sup>1</sup> US policy since 1955 in the South included extremely limited amounts of training and organizing of Vietnamese units. This delicate peace and piecemeal assistance left South Vietnam dangerously vulnerable to subversion from their neighbor to the north.

United State's interest in Saigon would elevate in 1961 with Soviet Prime Minister Nikita Khrushchev's proclamation that "national wars of liberation," or proxy wars, would be the focus of communist diplomatic and military operations in the future.<sup>2</sup> These types of wars would allow Communism to take root across the world without reaching the threshold of direct nuclear retaliation from the United States or its allies.

President John F. Kennedy and his advisors foresaw the inherent possibility of indirect

Soviet attacks on American interests through insurrection and subversion of its weaker allies. The United States was forced to reassess its military strategy; desperately looking for a way to template thinned post-Korean Cold War formations on Communist sponsored insurgents occupying third-world countries.

That inward contemplation led to widely divergent opinions within the American government on shifting the military priorities from the undeniable nuclear threat to the nebulous menace of guerilla warfare. After initial resistance to the administration's policy, the military soon realized it had only limited ability to counter enemy aggression below the threshold that would initiate nuclear war. Defense budget dollars were hard fought, and any shift in priorities would start a massive reorganization of spending that could have severe ramifications on the programs and priorities throughout each of the services.

After heated deliberation, the Defense Department agreed on the need for dedicated counterinsurgency forces and the establishment of doctrine under which they would operate, two very important aspects that the United States significantly lacked.<sup>3</sup> It also identified the need for a military entity that could train other countries in putting down insurrections inside their own borders, thereby limiting large-scale American involvement overseas. Each of the services looked to their past for the answers.

The US Army and Navy saw the need for small, dedicated units specifically trained and equipped for unconventional warfare. Three Army Special Forces groups mirroring World War II era Office of Strategic Services (OSS) Jedburgh units, and two Navy Sea, Air, Land (SEAL) Teams designed from Underwater Demolition Teams (UDTs), were formed to assist theater commanders in waging unconventional land and

sea warfare. These groups had to focus on both clandestine guerilla operations and counter-guerilla operations, but questions remained on how attack and lift aircraft would be melded into their operations.<sup>4</sup>

#### US Air Force Counterinsurgency Operations

The Air Force, fully aware of its own decommissioned World War II era 1st Commando Group used successfully in Southeast Asia, initially decided they could do the job with the force structure in place. They foresaw the ability to train airmen as needed for the missions of parachute insertion and resupply of SF teams in coming conflicts. The 1940-50s wartime-proven long range infiltration / exfiltration, transport, psyop, and aerial resupply missions were not seen as important enough for dedicated organizations. In the late 1950s, only selected airlift and transport squadrons were given the secondary mission of Army SF transport, and they rarely trained in that mission area.<sup>5</sup>

But quickly, originating from President Kennedy's anxiety concerning the imminent spread of Communism, the Air Force created the 4400 Combat Crew Training Squadron (CCTS), with the unclassified nickname of "Jungle Jim" on 14 April 1961. The specialized unit based in Hurlburt Field, Florida, commanded by Col. Benjamin H. King, comprised of 228 enlisted and 124 officers, all volunteers who were personally interviewed by their commanding officer to determine their selection into the organization.<sup>6</sup> They were a low-profile force with the primary mission of directly conducting combat operations and training other forces in counterinsurgency aerial warfare, operating in "limited involvement, low intensity conflicts under austere conditions."<sup>7</sup> Tactical Air Command directed them to

Organize and equip a unit to (1) train USAF personnel in World War II-type aircraft and equipment; (2) ready a limited number of aircraft for transfer, as

required, to friendly governments; (3) provide advanced training of friendly foreign air force personnel on the operation and maintenance of World War II-type aircraft; and (4) develop or improve conventional weapons, tactics, and techniques of employment suitable to the environment of such areas as defined by [the Joint Chiefs of Staff].<sup>8</sup>

The strike aspect of the organization came easily to the unit, but the mission of unconventional aerial warfare and language training aspects dealing with foreign air forces would take time to fully mature. Past successes from World War II and Korea were once again sifted from the ashes left behind after post-Korean War downsizing.

Hurried Air Force research led to the selection of mothballed World War II propeller driven aircraft as the backbone of the squadron. This allowed the older, simpler, and most importantly, cheaper aircraft to be handed over to the host nation air force when training of their aircrew and maintenance personnel were completed. The 4400 CCTS, or “Air Commandos,” originally comprised of 8 modified T-28 trainers and 8 B-26 bombers that would perform reconnaissance and strike operations, while 16 C-47s would carry out transportation, airlift, and Psyops. How the 4400th would integrate these assets and the doctrine under which they would operate still had not been finalized.

T-28B aircraft were perfectly suited for finding and destroying targets. Air Force planners knew a FAC aircraft similar to the Mosquitoes of Korea would be essential to conducting counterinsurgency warfare, and the T-28 was picked to fill the role. It had two seats, provided excellent visibility to the aircrew, flew at slow speeds, could loiter for hours, and carry a relatively large ordnance load. They received added armor plating around vital mechanical components and cockpit, added two 50-caliber machine guns, and could carry 1,500 pounds of rockets and bombs.

The B-26s needed no modifications after being removed from storage, and were to be used for level or glide bombing. The aircraft were not structurally stressed for the “G” loading caused in the more accurate dive-bombing role. The strike aspect of the missions was foreseen to rely heavily on military or paramilitary ground FACs and airborne FACs to find the insurgent forces, with other Air Commando or indigenous CAS aircraft used to destroy them.

The C-47 Gooney Bird was redesigned to hold twice the normal fuel load and had reinforced landing gear to be able to operate from unimproved and short, high altitude airfields. Redesignated the SC-47, the cargo aircraft were fitted with a myriad of specialized improvements including racks for dropping paraflares and loudspeakers used for broadcasting taped Psyop messages. The aircraft were also the primary parachute insertion aircraft, Psyop pamphlet-dropping aircraft, with some even converted to the gunship role to provide close air support.<sup>9</sup>

#### Farm Gate

The summer of 1961 saw increased Communist action throughout South Vietnam, eventually leading to the stepping up of the 4400th's deployment. CCTS Detachment 2A, placed under 2nd Air Division command, departed Hurlburt Field on 5 November 1961 and was fully operational at Bien Hoa airfield in South Vietnam later that month.<sup>10</sup> Bien Hoa was a former French airstrip consisting of a single 5,800 by 150 foot pierced-steel runway littered with run-down facilities. The detachment was code-named “Farm Gate.”

Its personnel immediately began the daunting task of training the South Vietnamese Air Force. The Chairman of the Joint Chiefs of Staff gave the formal order granting Farm Gate aircraft the ability to engage North Vietnamese forces on 6

December, but only if South Vietnamese students were aboard aircraft delivering ordnance.<sup>11</sup> This bold statement would unknowingly set the stage for the ROE used throughout the next twelve years of conflict in Vietnam. The ROE delineated that no ordnance could be dropped in South Vietnam unless authorized, or “cleared hot,” by a Forward Air Controller, giving him ultimate control of the weapons employed by United States or Vietnamese Air Force (VNAF) aircraft.

Aircrew were initially disappointed at the rules established at the time. These restrictions soon became the main issues limiting the effectiveness of Farm Gate operations. Pilots expected to be engaged in unrestricted combat operations against North Vietnamese forces from the outset, a point which General Curtis LeMay himself had ensured Col. King before their departure. They soon found they were restricted to following VNAF aircrew during training sorties to the targets and observing strike missions, with the ability to attack targets themselves only when authorized by Vietnamese FACs.<sup>12</sup>

The Farm Gate pilots were all highly motivated, expertly trained, and had an in-depth knowledge of the Vietnamese culture, military, history, and societal complexities of the areas in which they worked. They felt their talents and training were being misused, and wished to be an autonomous American combat force. Due to situation reports sent through the Air Force to Washington asking for less restrictive ROE, Secretary of Defense Robert McNamara himself reaffirmed the 4400th's advisor role of its aircrew and purpose of their mission. He bluntly stated “Jungle Jim is to be used for training and operational missions in South Vietnam with Vietnamese riding rear seats.”<sup>13</sup> The pilots would have to deal with the restrictions placed upon them.

Early in 1962, convoys moving through South Vietnam were attacked more frequently. President Kennedy mirrored the Vietcong escalation with an increase in clandestine American involvement across the theater.<sup>14</sup> This included FAC aircraft and crews used to monitor convoy progression and provide CAS when needed. The shadowing of convoys by O-1 FAC aircraft was one of the biggest success stories of the time. Throughout the first half of 1963, no Vietcong ambushed convoys under the watchful eye of O-1 aircrew, while unescorted convoys were attacked frequently. There were also significant increases in airlift capability, additions to the Ranch Hand chemical defoliation unit, and more robust TACS to coordinate all of their operations.

The increase of commitment led to the reorganizing and augmentation of Military Advisory and Assistance Group-Vietnam (MAAG-V), and ultimately, on 8 February 1962, the formation of Military Assistance Command Vietnam (MACV). The MACV organization was commanded by Gen Paul D. Harkins, and quickly became the operational hub of American combat activities in Vietnam.<sup>15</sup>

Included in this structure was a revitalized version of the air operations center (AOC) which was used with great success in World War II and Korea. The AOC centralized the command and decision making, planning, and oversight of air operations. It also provided radar control to aircraft and linked major ground command areas to a respective air sector. III Corps Tactical Zone Headquarters was given the Tan Son Nhut AOC, with I and II Corps Headquarters assigned subordinate air support operations centers (ASOCs) at Da Nang and Pleiku. This was the most robust command and control network ever used by FAC aircrew, yet delays and technical problems seriously hampered their ability to perform their missions.

The strict ROE in place continued to slow American aid to VNAF operations. Even with the increase in American airpower and command structure, South Vietnamese President Diem insisted on retaining personal approval for all airstrikes, causing delays that would have disastrous results for US and VNAF personnel. Gen Bollen H. Anthis, MACV air component commander stressed the importance of authorizing joint operations staff approval on targets due to the time-critical nature of the intelligence and insurgent tactics employed by the enemy. Diem agreed to the arrangement, giving the much-needed final mission authority to the staff.

At the beginning of 1962, there was still no overarching doctrine on the implementation of FACs on the battlefield. The enemy had already infused itself into the fabric of the South Vietnamese countryside. In a conflict with no front lines, the Vietcong were able to slip into and out of South Vietnam as they pleased. Finding and destroying them by air was a significant problem. Intelligence on the Vietcong, although sporadic, was available. South Vietnamese civilians, as well as ARVN troops and their American advisors, gave credible reports on insurgent movements throughout the countryside, but were rarely able to muster enough assets to deal with them.

The initial tactic used was relying on young Vietnamese officers to serve as ground FACs and air liaison officers (ALOs) assigned to units most likely to gain contact with the enemy. These personnel were poorly trained and hesitant to be proactive when their units came under fire. The Vietnamese FAC primarily acted as a radio operator who transmitted orders for fire support from their commander to higher headquarters, seriously limiting their potential effect on the battlefield.

US Air Force involvement in the ground war began soon after, placing FAC trainers alongside their Vietnamese counterparts in American-designed TACPs modeled after experiences in Korea. These TACPs consisted of a Vietnamese FAC with an Air Force fighter pilot assistant ALO, usually supplemented with an Army jeep, radio, and radio operators. The reorganization worked better, but the problem was not totally fixed. The radio carried by the TACP was the only link between air and ground units. Many vehicles were lost to ground fire or by being bogged down in the rough Vietnamese terrain, causing serious problem in air support requests.<sup>16</sup>

Also, the South Vietnamese government had a standing policy encouraging severe punishment or even prison sentences to VNAF FACs who landed with aircraft damaged by ground fire or who accidentally harmed friendly forces in attacks on Vietcong.<sup>17</sup> This, combined with the typical Vietnamese FAC's bleak outlook on the long war ahead, led to a force of "unaggressive and unreliable" controllers.<sup>18</sup> Many Farm Gate aircrew would arrive overhead firefights and be unable to assist due to lack of Vietnamese FAC support.

The terrain in which ARVN troops and their American ground advisors were operating also seriously hampered their ability to call for needed support. The ground FACs and ALOs attached to these units found serious problems communicating and adjusting fires in a guerrilla war occurring under triple canopy jungle. South Vietnamese troops were in the beginning stages of understanding air-ground operations. Operations were slow at first, but began to pick up speed as more American advisors arrived and more joint missions were performed.

### O-1 Birddog

The introduction of the L-19, later redesignated the O-1 Birddog, was a step in the right direction for Vietnamese and American FACs. These small observation aircraft were able to operate from remote airstrips or straight dirt roads as short as 1,000 ft, much closer to the action than their T-28 counterparts. They carried smoke rockets for target marking and were outfitted with an extra radio attached to the back of the pilot's seat.

The main problem with the O-1 was the fact that the small aircraft could only power one of the two radios at once, severely restricting the FAC's ability to communicate with both ground forces and attacking aircraft simultaneously. Another limiting factor to their success was the small number of American FAC aircrew. They had the tasks of flying combat missions with Vietnamese observers, observing training flights for other crews, patrolling with Vietnamese ground forces as ALOs, providing flight ground school, and standing duty in the AOC.<sup>19</sup>

In January of 1963, CINCPAC ADM Harry Felt dropped the requirement for Farm Gate personnel to have counterinsurgency training, contributing a positive step towards getting more aircrew and maintainers into the region.<sup>20</sup> By the next month, the detachment consisted of 42 aircraft and 275 personnel. On 8 July 1963, Farm Gate at Bien Hoa was renamed the 1st Air Commando Squadron (Composite), reminiscent of its World War II cousin. By the end of the year, the common theme in theater was that the air war needed to be under direct American control. The South Vietnamese government was unable to stand alone under the increasing weight of the Vietcong insurgency inside its borders.

By 1964, Vietnamese and American FAC aircrew were beginning to see larger caliber anti-aircraft weapons used throughout the I and II Corps operating area, as well as the employment of Battalion-sized enemy units. This added to their stature as America's primary intelligence source on Vietcong (VC) troops. Captured 1950-era French and American arms were quickly being replaced by Chinese .50-caliber weapons, sometimes at the hands of North Vietnamese Army (NVA) regular forces.

American forces upgraded their stockpiles as well, replacing the T-28 with the larger A-1E Skyraider. The A-1 could carry its own weight in ordnance with much greater speed and range than the T-28. Vietnamese troops were quickly retrained on employing the new platform with great success.

On 9 March 1965, the ROE that US airmen had been waiting for finally arrived. The Joint Chiefs of Staff allowed 1st Air Commando Squadron aircraft to participate in combat operations in South Vietnam, with the caveat that US missions be limited only to flights VNAF aircrew could not accept. For the first time since their arrival, 1st ACS aircraft flew with US Air Force markings and delivered weapons in combat, without Vietnamese airmen aboard.

The air war in the South quickly turned in the American's favor. Unencumbered airborne FACs were soon able to thrive under the umbrella of doctrine, command and control, and tactics formed since late 1961. These combat proven professionals were the bedrock that the growing influx of FACs built their organizations throughout Southeast Asia upon.

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<sup>1</sup>Geoffrey Parker, *Warfare, Cambridge Illustrated History* (Cambridge, UK: Cambridge University Press, 1995), 350.

<sup>2</sup>Gary R Lester, *Mosquitoes to Wolves. The Evolution of the Airborne Forward Air Controller* (Maxwell AFB, AL: Air University Press, 1997), 81.

<sup>3</sup>Townshend Hoopes, *The Limits of Intervention: An Inside Account of How the Johnson Policy of Escalation in Vietnam Was Reversed* (New York: David McKay Co., 1969), 13.

<sup>4</sup>LtCol Wray R Johnson, “Whither Aviation FID?” *Airpower Journal* (spring 1997): 70.

<sup>5</sup>William W. Momoyer, *Airpower in Three Wars* (Washington, D.C.: Department of the Air Force, January 1978), 9.

<sup>6</sup>Lester, 84.

<sup>7</sup>CSAF/AFOOB, letter to Chairman Joint Chiefs of Staff, subject: Final Operational Concept “Jungle Jim,” 27 April 1961.

<sup>8</sup>Johnson, 70.

<sup>9</sup>Lester, 84.

<sup>10</sup>Ibid., 88.

<sup>11</sup>Ibid.

<sup>12</sup>Victory B. Anthony, *The Air Force in Southeast Asia: Tactics and Techniques of Night Operations, 1961-1970* (Washington, D.C.: OAFH, March 1973.)

<sup>13</sup>PACAF, message, to Chief of Staff, United States Air Force (CSAF), 17 December 1961.

<sup>14</sup>Lyndon B. Johnson, *The Vantage Point* (New York: Popular Library, 1971), 55-58.

<sup>15</sup>Momyer, 68.

<sup>16</sup>Robert F. Futrell, *The United States Air Force in Southeast Asia: The Advisory Years to 1965* (Washington, D.C.: Office of Air Force History [OAFH], 1981), 143.

<sup>17</sup>*History of the 2nd Air Division* (Washington, D.C.: OAFH), 1, 110.

<sup>18</sup>Lester, 97.

<sup>19</sup>Ralph A. Rowley, *UASF FAC Operations in Southeast Asia, 1961-1965* (Washington, D.C.: OAFH, January 1972), 15, 18, 24-25; and *History 2nd ADVON*, 97.

<sup>20</sup>PACAF message to CSAF, 1 January 1963.

## CHAPTER 3

### THE SLOW-FAC AIR WAR

As of January 1965, there were only 144 USAF airborne FACs in Southeast Asia, a number that would increase dramatically with the full commitment of US forces later that year.<sup>1</sup> The increase in Air Force, Navy, and Army, and Marine attack aircraft signaled the need for more airborne FACs to control their weapons. The standing ROE, one that would not change throughout the war due to its overwhelming success, called for a FAC to control all ordnance dropped in South Vietnam.

#### FAC Aircraft in Vietnam

Trying to procure the perfect FAC aircraft, one suitable for controlling all CAS operations in Vietnam, was a challenge for all the services. The O-1 “Bird Dog” flown in the early advisory years by the Air Force was mainly selected and maintained due to its simplicity, not because it was the best aircraft for the job. The Air Force consensus after Korea was that FACs would never be airborne again, so no aircraft was pursued in the years after the war. In turn, two civilian models were adapted for the role.

In the early 1960s, Air Force defense funding was primarily focused on its massive long-range nuclear bomber force, and finding an aircraft suitable for visual reconnaissance and air strike control was not a priority. The O-1 had performed well in its initial trials over Southeast Asia. Aircrew themselves were relegated to devise tactics, techniques, and procedures to get the most out of the airframe they had in place already.

The Bird Dog had its share of problems. The single engine aircraft was slow, with a top speed of roughly 100 miles an hour fully loaded with rockets and fuel. It took time

to transit from home base out to the areas in which their units operated. If their services were quickly needed elsewhere, it took time to reestablish operations in the new location.

It also lacked the flight instruments required to safely operate at night, which was a detriment due to the fact that darkness was when enemy forces were most active. Those same instruments were also needed if pilots flew into clouds or other inclement weather. The O-1 was only able to operate under visual meteorological conditions, or VMC, leaving pilots to dodge the frequent Vietnamese rain storms and look for alternate divert bases if their own base weather was too bad to land.

The most important weapon of a FAC was his ability to communicate, and the O-1 did not contain all the needed radios for the job of coordinating air and ground forces. Aircrew usually strapped an extra battery powered high frequency (HF) radio to the back of their seat to ensure communications with ground forces. The communication system in the aircraft allowed the FAC to talk and listen on only one radio at a time, restricting his ability to comprehend the complete tactical situation on the battlefield. The FAC needed the ability to communicate with his TACP, numerous sorties of CAS aircraft, helicopter command and control platforms, directly to the ground forces themselves, and multiple artillery batteries.

The O-1 was also extremely vulnerable to enemy ground fire due to its low speed and operating altitudes. They could only carry a few 2.75-inch white phosphorous marking rockets to aid strike aircraft in target detection. There was no armor plating anywhere on the aircraft to protect the engine or pilot. The only self-protection available to FACs was the standard issue CAR-15 rifle, .38-caliber pistol, and the flack jacket they sat on as a “protective” seat cushion during missions.

However, the O-1's attributes far outweighed its problems. It was an extremely reliable aircraft able to operate from short, unimproved dirt runways. The Bird Dog was perfectly suited for operations in Vietnam, allowing FACs and small detachments of maintenance personnel to stage forward with the troops they would support from the air. Soldiers lived with and had direct access to many of the airborne and ground FACs supporting them throughout the conflict. The largest attribute of the aircraft was also, as mentioned earlier, one of its weaknesses. The slow speeds and low altitudes of slow FAC operations gave the pilots unparalleled visibility of the operating area, one much better than the high-speed fighters delivering ordinance for them. Finding enemy forces and friendly positions were the hardest part of ground support, and the O-1 performed it well.

This forward staging and flight profile facilitated the most important aspect of FAC operations: detailed integration of air support planning at the lowest echelon possible between the air and ground personnel executing missions. The air war over Vietnam proved the utility of staging FACs forward with the troops they supported. The FAC's primary job was to provide whatever support is needed to the soldier through his TACP, and if CAS requirements, ground scheme of maneuver, and mission objectives could be identified prior to mission execution, the air support was more timely and of the nature required.

The Bird Dog also had the endurance to loiter over the battlefield for long periods of time, allowing FAC coverage far away from local airbases. Once on station, the O-1 had time to look for any sign of enemy activity before the "fast movers," or strike aircraft arrived.

The nature of the Vietnamese geography and the often distant location of the Navy carriers and jet-suitable land-based airfields meant FACs sometimes waited up to thirty minutes or more for strike aircraft to arrive on station. Most FAC missions lasted more than three hours, which was the limit of the fuel carried in the O-1's fuel tanks.

The O-2A Super Skymaster was a military version of the commercial Cessna 337. At its introduction into the FAC pipeline in 1967, it brought no new great leaps in technology, having much the same strengths and weaknesses as the O-1. However, it did provide extra power with its two engines, better night instrumentation, and more smoke rockets for target marking.<sup>2</sup>

The North American Rockwell OV-10A Bronco was originally designed out of the Department of Defense's need for a counterinsurgency attack aircraft. A 1962 Marine Corps study and rising interest from the air division of the Central Intelligence Agency and US Air Force pushed the program into full production, with the first aircraft delivered to the Marines in 1968.<sup>3</sup> It excelled as an armed FAC platform during Vietnam for the US Air Force, Navy, and Marine Corps from its first deployment in 1969 until the end of the war.

The OV-10 looked very similar to the World War II era P-38 Lightning. It was three-quarters the size of the P-38, but with only half the horsepower.<sup>4</sup> It was capable of cruising at 190 miles per hour with full armament, but to get above 200 miles per hour, it had to be pointed at the ground to pick up speed. One Air Force Bronco pilot remarked, "The OV-10 looked so slow and ungainly, that the NVA gunners frequently made the same mistake as a novice duck hunter. They both forgot to lead their prey sufficiently, and most shots fell somewhere behind both the aircraft and the duck." He added jokingly,

“Either that or they were laughing themselves silly at the appearance of Uncle Sam’s newest efforts in counterinsurgency aircraft.”<sup>5</sup>

What the Bronco lacked in looks, it made up in firepower and durability. It was built to withstand seven times the force of gravity, or G forces, that the pilot would often pull evading ground fire or exiting the area from a rocket or gun attack. Its large, high, square wing allowed it to turn quickly, and climb or accelerate much faster than its O-1 or O-2 counterparts. The key to surviving low and slow over the battlefield was constantly varying heading and altitude, giving enemy gunners the hardest possible gun solution.

The OV-10 was designed from the beginning to give its pilots the best view of the ground possible. It had a small blunt nose cone, a large Plexiglas bubble canopy, two high-mounted propeller driven Garrett engines, and twin boom tails. A pilot that leaned completely outboard could see over the low mounted canopy railing directly at the ground underneath the aircraft.

The OV-10 was a FAC’s aircraft from the ground up. It contained ejection seats for two pilots, which was a much-needed self-protection measure and also provided needed pad of comfort to its pilots in case of fatal battle damage to the aircraft. The Bronco’s avionics and flight control systems were also ruggedly built. Every system had a backup, and simplicity was the standard of design. The flight control system was mechanical vice hydraulic, the fuel tanks were self-sealing, and the rugged landing gear and tires were stressed to withstand hard landings and takeoffs from unimproved dirt airfields. There was even a large aft compartment designed to fit three parachutists for insertions on clandestine missions.

However, the true genius was found in the communications suite. Pilots could simultaneously monitor an emergency Guard frequency radio, two ultrahigh frequency (UHF) radios, two FM radios, one FM homer radio, one very high frequency (VHF) radio, one HF radio, and a secure scrambler system.<sup>6</sup> All radios were controlled with a single row panel of selector switches. The radio panel allowed the Bronco pilot to select only the radios he wished to monitor, and transmit (one at a time) on one he selected.

Even though the radios would become severely cluttered with communications at times, only the FAC in an OV-10 could pick and chose conversations he deemed critical in which to participate. This allowed him to monitor and direct the ground and air picture as he saw fit, leaving the ability to call other outside agencies for support or direction without vacating crucial frequencies during a firefight.

A large disadvantage of the Bronco, besides its underpowered engines, was that it had no air conditioning. The aircraft designers placed only two small ram-air vents by the pilot's legs, and one in the canopy above his head. Pilots jokingly remarked how much more comfortable missions were when the canopy was punctured by AK-47 fire, allowing cooler airflow into the greenhouse-like cockpit.

Another aspect that solidified the OV-10's success was its lethal armament. Interestingly, by 1965, the 2nd Air Division had its doubts as to whether FACs should be armed.<sup>7</sup> This was attributed to the misguided World War II notion that an armed FAC would act like an attack pilot instead of performing his job as a controller.<sup>8</sup> Tests looking into the suitability of armed FACs were ordered from the Headquarters of the Air Force in May of 1968 to determine an armed FAC's effectiveness.

The “Combat Cover” Tactical Air Command test and the Seventh Air Force’s own “Misty Bronco” experiment proved the utility of armed FACs under a “phased response” theory that proposed limited ordnance from FACs to tie up the enemy until true CAS aircraft arrived on station.<sup>9</sup>

The “Misty Bronco” tests, which were held 4 April through 13 June 1969, showed that the OV-10 was able to answer “78 of 98 requests for CAS by themselves in an average response time of seven minutes.”<sup>10</sup>

Most engagements with the Vietcong and NVA troops were over quickly, with FACs spotting small elements of the enemy who had disappeared by the time CAS aircraft arrived. Armed FACs took out the middleman, decreasing the observation-to-shooting time once the enemy was found.

The Bronco had two hard points under its wings and two sponsons protruding from the underside of the fuselage for 5-inch Zuni missiles or 2.75-inch folding fin aerial rocket (FFAR) pods. The sponsons also contained four 7.62-millimeter M-60 machine guns for suppressive fire. The OV-10 also sometimes carried CBU-55 parachute retarded fuel air explosive (FAE) bombs. The OV-10’s typical loadout was 4 rocket pods, with a mix of WP, high-explosive, or flachette warheads. It could also carry three pods and a 20-millimeter gun pod on the centerline station directly under the cockpit if missions dictated.

#### USAF FAC Involvement in Vietnam

In late 1964, Joint Chiefs of Staff authorized 134 more Air Force controllers and three more Tactical Air Support Squadrons (TASS), the 20th, 21st, and 22nd, to administratively support them. By September of 1965, all four TASS were manned, with

one more TASS (23rd) scheduled for basing in Thailand later. Also, the Air Force primary FAC School in Hurlburt Field, Florida, was increasing graduate pilot numbers to support the demand.

The FAC requirement for pilots to have at least one year of fighter aircraft experience remained, causing temporary shortfalls in personnel available for missions. One way around the requirement was to retrain non-fighter experienced jet pilots in AT-33 Thunderbirds, a 1950's era jet trainer based at the newly established 3329th CCTS, Cannon Air Force Base, New Mexico. The 3329th was quickly formed and manned, and consisted of both the 140th Tactical Fighter Squadron and the recently activated New York National Guard for the mass production of FACs to send to Southeast Asia.

Cannon was the initial FAC training for Air Force aircrew before they went to primary FAC school at Hurlburt Field to qualify in the O-1 Bird Dog, O-2A Super Skymaster, or the OV-10A Bronco. At Cannon, cargo and bomber pilots from the USAF Strategic Air Command (SAC) and Military Airlift Command (MAC) were trained in basic fighter employment.

The training consisted of three months of ground school and sixty hours of flight time, including air-to-ground gunnery, rocket delivery, and dive-bombing.<sup>11</sup> Air Force Major Marshall Harrison flew O-1 Bird Dogs in South Vietnam as an advisor to the VNAF in 1963, prior to selection for FAC training. He stated,

There was a valid reason to have all FACs be qualified tactical fighter pilots. In Vietnam, almost every bomb dropped and every rocket fired from an aircraft had been cleared by a FAC. He ran the air war on the battlefield, coordinating all air strikes, the weapons to be used, and their employment.

His was the responsibility to make sure that no friendly troops were hurt by the air strikes, and whenever possible he physically marked with a smoke rocket each target to be attacked. He was the focal point of the air - ground

coordination, for the attack aircraft and ground troops were unable to talk to each other due to incompatible radio equipment. . . . In short, you bombed where the FAC told you to, and if he said “no,” then you didn’t bomb. It was no wonder there were so few second lieutenants in the business.<sup>12</sup>

The numbers still came up short when referenced against the Air Force-Army air-ground coordination measures signed in April 1965.

The agreement called for fully manned TACPs attached to Army units at brigade level and higher, requiring enough FACs at the brigade for two to be assigned to each battalion. With 224 personnel in place, the Air Force could only man one FAC per battalion.<sup>13</sup> This caused “pooling” or resourcing of available aviators at the brigade level. The shortfalls in pilot numbers meant FACs were “farmed out” to the battalions only as they operationally needed them.

#### US Navy FAC Involvement

The US Navy had only one land-based fixed wing attack squadron throughout the Vietnam War. The “Black Ponies” of Light Attack Squadron 4 (VAL-4) were technically a close air support squadron designed to protect brown-water (riverine) forces and SEAL commando teams operating throughout the Mekong Delta.

Even though CAS was their primary mission, the squadron assumed the mission of airborne forward air control soon after operations began in March of 1969, controlling CAS sorties and adjusting naval gunfire and artillery strikes from all services. They operated from two detachments located at Binh Thuy and Vung Tau.

Naval air support for riverine operations did not go well in the Mekong Delta and Rung Sat special zone early in the war. All Navy CAS for Operation “Game Warden” in December 1965 through 1966 came from aircraft carriers positioned on Dixie Station 100 miles southeast of Cam Rahn Bay. The attack jets, with little on-station time and serious

difficulty finding targets themselves, were less than adequate for the job of finding and destroying small elusive bands of enemy forces. December 1966 saw only three Navy CAS sorties in the South, with only one sortie in December 1967.<sup>14</sup>

Admiral Elmo R. Zumwalt Jr., Commander Naval Forces Vietnam (ComNavForV,) stated that “[General Crieghton Abrams] was totally dissatisfied with the Navy’s operation in-country. That they were not involved, that they were not helping him in the Delta. That’s when I started looking for ways in which to optimize our operations and came up with ‘Sea Lords’ . . . then I began clamoring for the fixed-wing aircraft to get the job done in the Delta.”<sup>15</sup>

“Sea Lords”, or South-East Asia Lake, Oceans, River, and Delta Strategy, was a broad campaign initiated in November 1968 to stop Vietcong infiltration into South Vietnam from the riverways leading out of Cambodia. US and ARVN forces needed the supply routes cut off if they were to regain the countryside from the Vietcong. VAL-4 and their brethren attack helicopter squadron HAL-3, were the primary naval air assets stood up to fill the gap of providing time-critical CAS for U.S Navy, Army, and ARVN forces in the Delta.

On Admiral Zumwalt’s request, VAL-4 was commissioned on January 3, 1969 at Naval Air Station North Island, near San Diego, California, borrowing OV-10A Broncos from the Marine Corps. The Navy’s Bureau of Personnel (BUPERS) believed they would have a hard time finding pilots for the unorthodox job. The assignment would take veteran aircrew from their own stable warfare communities into an unknown world never attempted by the Navy.

It was widely recognized VAL-4 would only exist for a few years, and they would return their OV-10s to the Marines once their usefulness had ceased. All other Navy attack squadrons were flying jets based on aircraft carriers. This meant that pilots excepting orders to the relatively unknown Black Ponies would have to compete with their regular Navy counterparts for promotions and command.

The propeller-driven A-1 Skyraider attack aircraft and S-2 Tracker antisubmarine warfare aircraft were being phased out of the Navy's inventory, and many pilots, seeing the end of their careers quickly approaching, jumped at the idea of brown-water combat in Vietnam. The squadron was ultimately deactivated on April 10, 1972 after flying more than 21,000 combat sorties in Southeast Asia.

Light Helicopter Attack 3 (HAL-3) "Seawolves" flying UH-1 Huey gunships, were tasked with dedicated close air support, dustoff, and air-mobile operations for the joint Army / Navy "Market Time" and "Sea Lords" interdiction missions in the South. HAL-3 was commissioned in June 1967 utilizing borrowed aircraft from another service as well. The Navy had no helicopter gunships of their own, so they borrowed older Army UH-1Bs until they could build up their inventory to acceptable levels.

HAL-3's numerous missions throughout South Vietnam and the limited number of assets and ordnance available severely hampered their ability to provide the needed umbrella of support throughout their operating area. The Seawolves were deployed in many small detachments throughout the South to shorten the response time of the relatively slow aircraft.

### US Marine Corps FAC Involvement

The first Marine Corps air involvement in Vietnam was a small detachment of HMM-362 O-1 Bird Dogs flying for operation “Shufly” during the advisory years in 1962 at Soc Trang. Marine FACs worked alongside their Air Force FAC counterparts, and by 1965, an entire squadron, Marine Observation Squadron Two (VMO-2), had arrived in country. VMO-2 discarded their Birddogs and transitioned to the UH-1E, then in 1968, to the OV-10. VMO-2 was the first squadron to fly the Bronco into combat operations from Da Nang airfield on 6 July 1968.<sup>16</sup>

Marine Aviation Observers, who were the first non-pilot American aircrew used as FACs, filled the OV-10 back seats. The observers were primarily Bronco-qualified ground commanders and artillery officers. VMO-2 Broncos were attached to the 9th Marine Expeditionary Brigade at Da Nang and 1st Marine Aircraft Wing, Fleet Marine Force, Pacific, with detachments at Dong Ha and Khe Sanh, Republic of Vietnam.

In 1966, Marines pioneered the concept of the Fast FAC, utilizing two-seat F9F Panther jet aircraft to reach deep targets on the Ho Chi Minh Trail and coastal North Vietnam. The aircrew could control interdiction missions and CAS flights working for Special Forces soldiers deep inside the reaches of the country far from areas the Slow FAC could reach. Also, more lethal air defenses including Soviet built radar-guided anti aircraft artillery and surface-to-air missile systems (SAMs) were fielded more and more frequently. Only jet aircraft performance could defeat these types of systems.

### FAC Operations 1965-1970

The 2nd Air Division, who ran Air Force operations in Southeast Asia, was soon so large it became the Seventh Air Force in April 1966.<sup>17</sup> Under that organization, the

504th Tactical Air Support Group (TASG) ran all USAF FAC operations in the area. It coordinated all replacement aircrew, aircraft, and standardization, as well as logistics.

By 1968, the 504th TASG had 2,971 personnel including 668 FACs, operational units at 70 locations, seven direct air support centers (DASC). Assigned ALO / FACs worked with 2 US Army field force headquarters, 10 Divisions, 34 Brigades, and 119 Battalions. Supporting the ARVN, ALO / FACs worked with four Corps Headquarters, ten Divisions, forty-three Provinces, and sixty-three Special Forces Camps.

The 504th operated five TASSs: 19th TASS at Bien Hoa; 20th TASS at Da Nang; 21st TASS at Nah Trang; 22nd TASS at Binh Thuy; and 23rd TASS at Nakhon Phanom in Thailand. The 325 aircraft of the 504th flew one-third of the total combat hours in Southeast Asia throughout 1967 and 1968.<sup>18</sup>

#### Out-of-Country Operations

The air war being overtly waged in North and South Vietnam was being covertly mirrored by clandestine American air forces spread throughout Laos and Cambodia for most of the war. From 1964 until 1970, the US only acknowledged performing “reconnaissance flights” with attached armed escorts over Laos. Those armed escorts could engage the enemy only if they were fired upon first.<sup>19</sup> President Richard Nixon himself stood before the American public flatly denying the fact there were American armed forces in Laos.

A majority of the Ho Chi Minh trail, used heavily in the resupply of the reunification effort in South Vietnam, passed relatively untouched through the eastern regions of neutral Laos and Cambodia, and the US was secretly not willing to let the aggression go unchecked. Also, both neighboring countries were the targets of increasing

seasonal assaults by North Vietnamese forces looking to gain ground and recruit popular support in the region. Vietnamese reunification under the Communist flag was not the only aim of Ho Chi Minh. In documents recovered by the French in 1952, it was clear that the goal, since the 1929 formation of Ho Chi Minh's Indochinese Communist Party, was the formation of Communist governments in South Vietnam, Cambodia, and Laos.<sup>20</sup>

The United States knew the porous border regions were impossible to seal off completely, and looked for answers that would even out the logistical advantage of the North Vietnamese government in their breach of the neutrality of their Western neighbors. American troops did not have cross-border authority due to administration worries concerning conflict outside the Vietnamese borders, leading to possible direct intervention by the Soviet Union or Communist China. A quiet solution had to be found.

The American strategy to deal with the influx of North Vietnamese men and material relied upon clandestine paramilitary forces and aerial bombardment used to disrupt, delay, and destroy their progress south. United States Army Special Forces "A" Teams operating under the Studies and Observations Group (SOG) and CIA officers were aided by aircraft and space-based photographic reconnaissance assets and sensitive listening devices buried around the Ho Chi Minh trail. Intelligence from the local populace in the rural eastern reaches of Laos and Cambodia also aided in targeting NVA forces. The SOG and CIA waged unconventional warfare focused on the training and supplying of local militias to fight North Vietnamese and Vietcong troops on their trip south.

Personnel from the Office of Strategic Services, which later became the CIA, had planted the clandestine infrastructure in the later stages of World War II to counter Japanese occupation of Southeast Asia, and had remained in small numbers ever since.

In 1961, the incoming Kennedy and outgoing Eisenhower administrations agreed that Laos would be the next Asian “domino” to fall to Communist forces, mirroring what happened to China, as well as the Soviet occupation of eastern Europe only a decade before. This prompted the largest CIA-sponsored covert buildup in history. They trained and armed a small band of Laotian forces called the Meo who were defending their homeland from the seasonal NVA offensives on the Plain of Jars in central Laos.<sup>21</sup>

The French-trained General Vang Pao, who was technically under the command of the chief of staff of the Royal Lao Army, led the Meo virtually on his own.<sup>22</sup> General Vang Pao ran his operations from Long Tieng, a purposefully secluded airfield that was known by its American inhabitants as “Spook Heaven,” or “the most secret spot on earth.”<sup>23</sup>

The airfield was technically known as landing strip, or Lima Site 20 Alternate. The title “alternate” was used to mislead visiting bureaucrats as to the gigantic size of the CIA operation, leading one to believe it was merely an auxiliary site for emergency aircraft landings.<sup>24</sup> In reality, Lima Site 20A was the heart of operations for the CIA and Meo’s war on the invading North Vietnamese. General Vang Pao was initially aided in 1959 by the US State Department’s Program Evaluation Office (PEO), a quiet military assistance program that used civilian-clothed American “technicians” to train Royal Lao Army infantry troops. This gave way in 1961 to White Star Mobile Training Teams, a

group of 400 US Special Forces personnel who continued more specialized training and went on patrols with the indigenous forces.<sup>25</sup>

Due to increasing North Vietnamese infiltration, Laotian Prime Minister Souvanna Phouma requested direct assistance from the United States to train the ill-equipped Royal Lao Air Force. In April of 1964, the US Air Force sent Detachment 6, 1st Air Commando Wing, code-named Waterpump, and Air Commando FACs to Udorn Airfield, Thailand.<sup>26</sup>

Throughout the war, the CIA operated their “civilian” airline, Air America, who flew a broad variety of cargo and passenger planes, as well as helicopters throughout Southeast Asia. Air America used the cover of delivering personnel and humanitarian aid throughout Southeast Asia to gain access to regions US military pilots could not.

In reality, Air America was used not only for transport, but paramilitary operations as well. The airline was used to rescue downed pilots, and took part in missions to resupply an Air Force tactical navigation aid located on the top of Phou Pha Thi Mountain, a 5,600-foot sheer ridgeline in Eastern Laos. The navigational aid was critical to American airpower, allowing all-weather radar bombing of North Vietnam. The site, manned by secret Air Force and Lockheed Aircraft Systems personnel, repeatedly came under heavy attack from NVA forces.

On 12 January 1968, obsolete North Vietnamese Air Force AN-2 fabric covered biplanes attacked the US Air Force site using World War I tactics of firing crew served machine guns and dropping mortar shells out of their windows.<sup>27</sup> A single Air America helicopter crew chief beat back the airborne attack by downing one of the AN-2s with his

Uzi submachine gun. The same Air America helicopter then forced another AN-2 down well north of the navigational aid.<sup>28</sup>

Air America aircraft were also used as a modified FAC platform on CAS missions for their operators in the field. CIA-recruited “Butterfly FACs” sat in the right seat of support flights, riding in unarmed PC-6 Pilatus Porters. The Butterflies operated in an unplanned and mostly unorganized environment, using methods and procedures they made up or borrowed from others. The FACs, numbering only four throughout their existence in Laos, threw smoke canisters out of their aircraft as marking rounds, or performed visual descriptions, or “talk-ons” to designate targets for awaiting CAS aircraft.

General William M. Momoyer, commander of the 7th Air Force in Vietnam and deputy MACV, learned that his multimillion dollar jet fighter aircraft were being controlled by non-pilot CIA operatives operating “in the black” in a region no Americans were allowed to operate. He quickly terminated the Butterfly FAC program and created the “Ravens,” a small Air Force unit consisting of FACs that already had six months of air control experience in Vietnam. Even with its humble beginning, the Butterfly program proved the need for and validated the concept of a parallel FAC program in the “Other Theater.” From the Butterflies, the secret “Steve Canyon Program” was born.

Steve Canyon, a character in the Milton Caniff comic strip created in 1947, was picked as the code name for the 1966 offshoot of Project 404 in Laos. The character Steve Canyon was “a Gary Cooper type, with a shock of slick-back blond hair and a pipe clamped in his jutting jaw. He dressed in flying coveralls, always carried a 45-millimeter automatic in a shoulder holster open to sight, and traveled the world undertaking ‘any

assignment as long as it is perilous, exciting, and decent.”<sup>29</sup> The Steve Canyon code name fit the project perfectly. It added an air of secrecy and all-American daring that would be used to recruit Ravens from the ranks of FACs serving in South Vietnam.

As more pilots were snatched from the regular Air Force, and operations began using US CAS aircraft in theater, the myth of the Ravens and the Steve Canyon Program quickly grew. Attack pilots launching from South Vietnam, the Tonkin Gulf, or Thailand would return from missions unable to talk about where they operated, whispering only that they had communicated with a FAC called “Raven” and that they flew outside the normal reaches of the war. Christopher Robbins in his book *The Ravens*, relates the myth surrounding the FACs in Laos:

The pilots in the Other Theater were military men, but flew into battle in civilian clothes-denim cutoffs, T-shirts, cowboy hats, and dark glasses, so people said. They fought with obsolete propeller driven aircraft, the discarded junk of an earlier era, and suffered the highest casualty rate of the Indochinese War - as high as 50 percent, so the story went. Every man had a price put on his head by the enemy and was protected by his own personal bodyguard. Each pilot was obliged to carry a small pill of lethal shellfish toxin, especially created by the CIA, which he had sworn to take if he ever fell into the hands of the enemy. Their job was to fly as winged artillery for some fearsome warlord, who led an army of stone-age mercenaries in the pay of the CIA, and they operated out of a secret city hidden in the mountains of a jungle kingdom on the Red Chinese border.<sup>30</sup>

The myth was almost all fact. Pilots who volunteered for the program, and lived through it, left the program six months later a changed person. One in eight Ravens never returned home. Volunteering to defend the Mao and their families from NVA insurgents was a mission the Ravens were willing to give the ultimate sacrifice for. Many left the conflict confused at why such a noble cause was kept secret from the American people. Raven Mike Buyers stated

In Vietnam I would have rather been on the side of Ho Chi Minh whipping up on LBJ. Morally it would have felt better. But I have no doubts I’m on the

right side here in Laos. Our politicians are so stupid they won't even tell the people the truth. Here we are, a small group of American volunteers fighting side by side with a bunch of oppressed hill tribesmen who have the gall to take on the might of the North Vietnamese Army. I'd have every grandma in the world sending me her life savings to buy ammo.<sup>31</sup>

In the end, the Ravens could only prolong the inevitable. Under the signed ceasefire, the last Raven was ordered to depart Laos in September 1973, leaving the Laotian government and Meo guerrillas to defend their homeland on their own.<sup>32</sup> The Communist Pathet Lao and NVA drove General Vang Pao and his Meo forces from Long Tieng on 15 May 1975.<sup>33</sup> By December, Laos was officially a Communist state.

Neighboring Cambodia would also share Laos' fate in the end. On April 30, 1970, the Richard Nixon administration under the *War Powers Act*, launched the "invasion" of Cambodia with the Army of the Republic of Vietnam.<sup>34</sup> The US and South Vietnamese Army's aim was to destroy the NVA men and equipment using eastern Cambodia as a staging base for attacks on the South. The operation was a "tactical success" and destroyed roughly a year's worth of equipment, but the Ho Chi Minh trail and NVA sanctuaries were rebuilt quickly after the ARVN and US ground forces left. President Nixon had only two months to withdraw US ground troops before he needed congressional approval, but the US Air Force operated covertly in country until 15 August 1973.

As in South Vietnam and Laos, FACs would be needed to control the massive amount of airpower brought against the NVA and Khmer Rouge (Red, or Communist Cambodians.) They fell under the callsign of "Rustic," and were charged with providing air support for Cambodian ground forces. They operated OV-10s and O-2s around the clock with French-speaking American or Cambodian backseaters.

They too were successful in aiding ground forces due to their forward presence and quick response time, as well as the intense drive of knowing failure meant friends being overrun and killed. Lt Col. Mark Berent, USAF (Ret.), the Air Attaché' in the American Embassy in Phnom Penh, Cambodia, said "The Rustics gave the Cambodians just as much courage and skill in return as they have given the American ground troops in Vietnam."<sup>35</sup> By April of 1975, the Khmer Rouge walked into Phnom Penh and occupied the government buildings, sealing Cambodia's fate under Communist rule.

#### Visual Reconnaissance

In a war with no front lines, except for the 17th parallel that separated North Vietnam from South Vietnam, finding targets and identifying them was the most important aspect of the FAC's job. The FAC mission had become much more complicated than the preceding aerial observers of World War I and II, and the early Mosquito FAC missions in Korea. With no bomb line to differentiate friend from noncombatant from foe, the FACs mission became much harder.

The more elusive the enemy, the lower the FAC would have to fly to find and differentiate them. North Vietnamese Army (NVA) soldiers augmented the Vietcong (VC) and brought larger 50-caliber antiaircraft weapons into the South. Aircraft and aircrew losses began to mount.

By day, the insurgent enemy hid from view or moved quietly in small groups dressed like local peasants to avoid detection. The VC owned the night. They executed missions gaining popular support in villages, moved mass logistics and personnel, and harassed both ARVN and American forces. Every small village was a potential Vietcong logistics base or staging area. Intelligence could only be gained in one of two ways:

Someone on the ground reported Vietcong activity or the aircraft spotted them themselves.

The only way to find and defeat the Vietcong was to know how he operated. FACs quickly became experts at visual reconnaissance, averaging more than 60 percent of their time finding targets.<sup>36</sup> They needed to know the VC sleeping pattern, eating habits, how and why they moved, and most importantly, the size, time, frequency, and method that they attacked.

Aircrew used two main methods for gaining this information: Repetition of flying the same area of operations every day, and US and ARVN Special Forces and conventional units who had been operating on the ground in their assigned sector. Major Marshall Harrison, then assigned as a FAC flying from Di An for the 19th TASS, stated,

We cruised slowly about the area, searching for anything that might indicate enemy activity - movement or evidence of recent movement, fresh tracks along a trail, smoke coming from areas where there should be no smoke, too many farmers toiling in the paddy fields. This was going to be 90% of my job for the next year – flying slowly around looking for anything suspicious. They say that after a few months in an area a FAC can tell if there are VC or NVA there by how much laundry the local mama-sans hang out to dry.

I never counted the number of drying black pajamas, but I did learn to look for small, telltale wisps of smoke from early-morning cooking fires and for small vegetable patches where they shouldn't be.<sup>37</sup>

Harrison also stated that the South Vietnamese family's water buffalo was another of the best indicators determining enemy presence. The animal was one of the largest investments peasant families had, and could not sacrifice them to stray bullets in a firefight. At the first sign of danger, the animals were corralled into huts for safekeeping.

Once the enemy was found, the full weight of American and VNAF forces quickly descended on the area. The tactics, techniques, and procedures used by airborne FACs were shared across the services. Slowly, one engagement at a time, the lethality of

the “bringers of death” (a term used by the NVA referring to the FAC) was tested across South Vietnam.

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<sup>1</sup>*History of the Second Air Division (2nd AD)*, vol. 3, *July-December 1964* (Washington, D.C.:OAFH, 1969), 27-28.

<sup>2</sup>Gary R Lester, *Mosquitoes to Wolves: The Evolution of the Airborne Forward Air Controller* (Maxwell AFB, AL: Air University Press, 1997), 132.

<sup>3</sup>Kit Lavell, *The Flying Black Ponies* (Annapolis, MD: Naval Institute Press, 2000), 21.

<sup>4</sup>Ibid.

<sup>5</sup>Marshall Harrison, *A Lonely Kind of War. Forward Air Controller, Vietnam* (San Francisco, CA: Presidio Press, 1989), 44.

<sup>6</sup>Ibid., 9.

<sup>7</sup>Lester, 111.

<sup>8</sup>Ibid.

<sup>9</sup>*The Air Force in Southeast Asia: Tactics and Techniques of CAS*, 120-31.

<sup>10</sup>Lester, 112.

<sup>11</sup>Harrison, 18.

<sup>12</sup>Ibid, 43.

<sup>13</sup>Headquarters, USAF Draft Report, “Effective SEAsia Tactics (TACS),” 1969, 3-1.

<sup>14</sup>Lester, 111.

<sup>15</sup>Lavell, *Black Ponies*, 20. Excerpt from a telephone interview in 1999 between ADM Zumwalt and Kit Lavell, the author.

<sup>16</sup>Maj John Scanlan, “FastFac or FastDAC?” (monograph, USMC Command and Staff College, 1997).

<sup>17</sup>George S Eckhardt, *Command and Control, 1950-1969* (Washington, D.C.: Department of the Army, 1974), 64.

<sup>18</sup>Lester, 117.

<sup>19</sup>CINCPACAF message, 15 February 1969.

<sup>20</sup>Christopher Robbins, *The Ravens* (New York: Crown Publishers, 1987), 87.

<sup>21</sup>Ibid., vii.

<sup>22</sup>Ibid., 37.

<sup>23</sup>Ibid., 36.

<sup>24</sup>Ibid.

<sup>25</sup>Ibid., vii.

<sup>26</sup>Ibid.

<sup>27</sup>Ibid., 42.

<sup>28</sup>Ibid.

<sup>29</sup>Ibid., 7.

<sup>30</sup>Ibid., 1.

<sup>31</sup>Ibid., 159.

<sup>32</sup>Ibid., 326.

<sup>33</sup>Ibid., xi.

<sup>34</sup>Richard Wood, *Call Sign Rustic: The Secret Air War over Cambodia, 1970-1973* (Washington and London: Smithsonian Press, 2002), xix.

<sup>35</sup>Wood, xi.

<sup>36</sup>Lester, 121.

<sup>37</sup>Harrison, 88.

## CHAPTER 4

### THE FAST-FAC AIR WAR

American aircrew and intelligence personnel watched a quickening buildup of high-technology Soviet weaponry, including radar-guided SA-2 and SA-3 SAMs, and more lethal antiaircraft artillery (AAA), find its way farther south. This caused FACs and airpower planners to reassess the way targets were to be attacked in higher threat areas, which included air defense systems more lethal than the small arms, 37-millimeter, and sporadic hand-held SAMs aircrew were accustomed.

Just for aircrew to survive in a high threat environment meant either suppressing the enemy air defenses to a point which normal operating altitudes and airspeeds could be maintained, or by operating in a manner that degraded the enemy gunner's ability to successfully engage a friendly aircraft. And that was just aircraft survival. For successful employment of FAC operations, friend and enemy had to be found, precise WP marking rounds delivered, and aircraft had to be controlled by FACs making repeated passes over the target area. New tactics and aircraft would have to be tried and tested to ensure the overwhelming benefits of the FAC programs in Vietnam adapted to the increasing lethality of the battlefield.

It was evident from slow FAC aircraft losses that the O-1, O-2, and even the OV-10 would not be able to survive against higher caliber AAA and more complex SAMs seen throughout North Vietnam and portions of Laos. Slow-FACs would need to be restricted to South Vietnam and the less threatening regions of Laos and Cambodia.

### US Marine Corps Fast-FAC: F9F Panther and OA-4 Skyhawk

The Marine Corps was the first organization to test the concept of jet-powered airborne FACs. In 1966, due to growing requirements for interdiction missions along coastal Vietnam and the Ho Chi Minh trail, two-seat F9F Panthers from Da Nang replaced HMM-362 O-1 slow-FACs.<sup>1</sup> The distances involved, as well as the growing NVA surface-to-air threat in the Marine operating area, were the two prime reasons for the shift in platform and procedures.

There were no doctrine or standard procedures for the Panther pilots to follow. Senior members of the squadron, some with Korean War experience in air control, taught the other pilots FAC procedures as time permitted. The F9F performed well in relatively small numbers until August of 1967 when the two-seat A-4 Skyhawk took over the job.<sup>2</sup>

The OA-4, with the “O” designation for observation, was implemented in much the same way as the Panther. The small, nimble A-4 was perfect for the job of air control, able to carry 3,000 pounds of ordnance and fire twin internal 20-millimeter cannons in the wing roots. Their primary mission was interdiction beyond the FSCL, but Skyhawks were also called to control CAS missions frequently. The first Marine SOP manual regarding airborne fast-FAC missions was published by the “Playboys” of Headquarters and Maintenance Squadron Eleven (H&MS-11) in 1969.

### Operation Commando Sabre: The Misty FAC

For missions farther north, Seventh Air Force Commander General William W. Momyer, authorized an experiment called Operation Commando Sabre, a program designed to assess the F-100F Super Sabre’s ability to provide forward air control and armed reconnaissance in high threat environments.<sup>3</sup> He was eager to see the results of jet-

powered aircraft in the FAC role, and believed a two aircrew, high speed aircraft that could aerial refuel and launch marking rockets, as well as employ 20-millimeter cannon fire, was just what the FAC program needed.

On 28 June 1967, the project was given to Detachment 1 of the 416th Tactical Fighter Squadron, 37th Tactical Fighter Wing, located at Phu Cat Air Base in South Vietnam. The FACs were given wide latitude to experiment with tactics, and operated under the callsign of “Misty.”<sup>4</sup> The largest hurdle faced by the Misty FACs was in finding hidden enemy targets and friendly troops from higher altitudes and faster airspeeds. Much of their training concentrated on this aspect of operations, which offered only seconds to spot the enemy and direct CAS aircraft on them.

The Misty test syllabus consisted of ground school focused on ROE, target identification, and integration with other ground and airborne air controllers. The flight portion of the syllabus called for the FAC student to ride in the back if an instructor’s F-100 for the first six training missions, followed by a series of front and back seat sorties until he was mission qualified at 20 flights.<sup>5</sup>

Misty FACs operated the same way tactically as their propeller driven brothers, except at much greater speeds and higher altitudes. To stay above a majority of the AAA, Misty tactics called for operations above 4,500 feet above ground level (AGL), and no slower than 400 nautical miles per hour (knots, roughly 450 mph).<sup>6</sup> Also, no aircrew were allowed to make multiple passes over any target, and there were required to let the target area “cool off” for a few minutes before they could make a high speed pass BDA.<sup>7</sup>

The Mistys themselves knew their own limitations. In troops-in-contact situations, the bread and butter of forward air control, fast FACs called for slow FACs to take over

operations, taking high cover to assist in CAS aircraft join-ups, target location, airspace routing and deconfliction, and radio relay to the command and control architecture in place. Only after it was determined that an enemy's air defense threat made the target area unworkable to slow FACs would the fast FAC control ordnance in close proximity to friendly forces.

Another deadly limitation of the F-100 was that the aircraft had no radar warning receiver (RWR), which alerted the aircrew to an enemy radar illuminating their aircraft, or electronic countermeasure pods used to deceive or defeat incoming SAMs.

The airspeed and altitude of the fast-FAC, as well as the ballistics of Zuni marking rockets caused the Misty to salvo a number of rockets in the general target area, and correct awaiting CAS flights off the rocket that hit closest to the target. The surgical nature of the slow FAC / Zuni combination, which usually meant a single WP rocket that normally hit the actual target itself, was sacrificed. However, if a visible mark was available, and the Misty gave an accurate correction from the smoke to the fighters, the effect was much the same.<sup>8</sup>

As fast-FACs logged more and more combat missions, their ability to find and destroy targets in the FAC and armed reconnaissance role improved greatly. Misty FACs flew 82 missions and controlled 126 CAS sorties in July 1967. They found 150 truck parks, bridges, fords, and spots suitable for road interdiction on flights by themselves that month, greatly increasing the overtaxed intelligence system in place at the time.<sup>9</sup> From a single operation in September 1967 alone, it was determined that CAS aircraft under control of Misty FACs were "twice as effective as those flown without them."<sup>10</sup>

Mistys also pioneered the use of fast-FACs in adjusting ground based and naval artillery, as well as substituting for A-1E “Skyraiders” in the combat search and rescue (CSAR) “Sandy” role. Sandys orchestrated the pickup of downed airmen throughout Southeast Asia, coordinating the Jolly Green H-53 helicopters and CAS cover for infiltration and exfiltration of the rescue package. Having a Misty perform the role meant the F-100 Sandy could get on station quicker, coordinate airstrikes, and sanitize the ground around the downed pilot while awaiting the rescue helicopter.

Another serious limitation of the F-100F was the age of the aircraft itself. The Super Sabre was pulled from the Vietnam inventory on 14 May 1970, paving the way for the already established F-4 Phantom FAC programs active across Southeast Asia.<sup>11</sup>

#### Stormy, Wolf, Tiger, and Night Owl: Phantom FACs

The demise of the F-100F Misty FAC program had been expected for some time. The logical replacement for the aging Super Sabre was the F-4 Phantom II. Tests were authorized to determine the newer aircraft’s effectiveness as a FAC platform on 1 Jan 1968.<sup>12</sup> The Phantom was widely available across the US Air Force, Navy and Marine Corps inventories. Misty aircrew spent much of their last few months training F-4 pilots in the F-100 and vice versa, quickly spreading resident FAC knowledge from one community to the other.

The Phantom II was used tactically in much the same way as was the Super Sabre, and it too had its good and bad points. A 20-millimeter gun pod was bolted to the aircraft centerline, which caused higher drag and increased fuel consumption, but provided needed suppression in the FAC mission. The tests were run with two 370-gallon external fuel tanks and two 5-inch Zuni rocket pods with a mix of ordnance. It was quickly

determined that the Phantom burned gas much quicker than the Sabre, and therefore needed more aerial refueling which led to more time away from the target area controlling strikes.

In addition, the ground was mostly obscured from the rear cockpit by the large engine intakes on either side of the cockpit. A 60-degree angle of bank had to be maintained in flight for the backseater to help in ground reconnaissance or threat reactions. Another problem was the large amount of black smoke produced by the J-79 jet engines, which made the F-4 easier to spot by enemy gunners.

These negative aspects of the Phantom were overshadowed by the positive attributes that came with the airframe. Most important was the fact that there were so many F-4s and Phantom aircrew available in country for FAC duty. Another positive was that the Phantom FACs came from the same squadrons and airfields as other F-4s used for CAS, allowing controllers to brief and debrief face-to-face with the aircrew they would be controlling that day. They shared the same intelligence apparatus and could update the friendly and enemy situation together before they launched on a mission.

Other benefits were the Phantom's air-to-air radar needed for intercepting North Vietnamese MIG fighters and for aiding in-flight refueling, as well as advanced electronic countermeasures gear essential to degrading the latest generation SAM systems in North Vietnam. The Phantom was able to carry a vast array of ordnance, to include all types of gravity bombs, cluster munitions, and rockets. The F-4 also contained more complex navigational aids and instrumentation needed for operations in at night and through inclement weather.

Due to the large numbers of F-4s throughout the theater, four Air Force Wings stood up FAC programs after the 12th Tactical Fighter Wing (TFW) Phantom FAC program was certified in 1968. The 366th TFW, callsign “Stormy,” was the first unit to stand up an operational FAC program on 2 September, flying F-4D missions in route Package I.<sup>13</sup> Stormy aircrew pioneered Phantom night FAC missions. They used starlight scopes and flare support from C-130 “Blindbats” and C-123 “Candlesticks” to spot enemy troops and equipment for destruction by interdiction missions.

In Thailand, the 8th TFW, callsigns “Wolf” and “Night Owl” and the 388th TFW, callsign “Tiger” soon began their FAC programs as well. To gain knowledge and standardize procedures across the theater, the Wolves hosted a “FAC-In” on 25-26 November 1968, which brought O-1, O-2, OV-10, F-100, and F-4 FAC units under one roof in Thailand. Controllers picked apart problems with the communications and intelligence systems, and sent recommendations to the 7th Air Force on how to solve current problems.<sup>14</sup> Even though the Marine Corps had an established fast-FAC program one year earlier than the Air Force, the F-100 and F-4 airborne FAC programs were quicker to standardize and publish training programs, outline procedures, and spread combat tactics.

Tiger FACs flew the newer F-4E, which contained a chin-mounted internal 20-millimeter gun. Night Owls operated in the darkness, and used hand-held laser designators from their rear cockpits to guide the brand new Paveway laser guided precision bomb. Crews from the 8th TFW became operational FACs on 19 March 1969, and participated in Operation Barrel Roll, assisting O-1 Ravens that could not operate in

northern Laos due to the increasing surface-to-air threat. USAF Col. Dave “Scud” Yates, said of his time as a Tiger FAC in Laos:

In the Tiger FAC program, we did a mixture of FAC and armed reconnaissance missions. Along with our ability to work close to the ground, find targets, and stay alive single-ships [one aircraft], we also had the ability to shoot the gun, which happened to be the weapon of choice in troops-in-contact and SARs [Search and Rescue]. When you worked with someone and they went down, the first thing they needed was to have the area around them cleared. You would locate the downed crew and clear the area with a couple of bursts and convince the enemy that the fighters overhead were armed.<sup>15</sup>

The battlefield mixture of slow and fast FACs performing both armed reconnaissance and forward air control had its pros and cons. Slow FACs leveraged the fast FAC for his ability to coordinate beyond his own reach, while fast FACs relied on the slow FACs ability to pinpoint enemy and friend within meters of each other, and provide the surgical mark or destruction needed to minimize fratricide. The two combined, sure of their battlefield role, fit perfectly. Propeller or jet powered FAC operating on their own had to operate in their environment weighing decisions and mitigating risks knowing fratricide was the cost of errors in judgment.

Friendly ground forces were not the only ones paying a price. The fast-FAC mission was hazardous duty, with 42 aircraft lost from July 1967 to July 1970.<sup>16</sup> Heavy losses continued throughout the war. While American ground forces were leaving South Vietnam by the thousands, the air war continued to keep pace until the cease-fire was signed in 1973.

#### Vietnam Lessons Forgotten

Yet once again, like all other conflicts before it, FAC lessons were lost after the close of the War in Southeast Asia. The airborne FAC mission and the command and control architecture that supported it had become a well-oiled machine by 1973, able to

match the right aircraft with the right ordnance to a ground or airborne FAC in a timely manner. Tactics for avoiding Soviet-built weapons were common knowledge across all fighter squadrons, and CAS procedures were perfected.

However, military leaders could not foresee ever getting into a military situation like Vietnam again, and distanced themselves from the way the conflict was waged. Program dollars went elsewhere, and FAC programs in the Air Force and Marine Corps died on the vine, leaving America ill prepared for its next test.

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<sup>1</sup>Maj John M. Scanlan, “Fast FAC or FastDAC?” (monograph, USMC Command and Staff College, 1997), 2.

<sup>2</sup>Ibid.

<sup>3</sup>*History of Commando Sabre Operations*, April-June 1969 (Washington, D.C.: OAFH, 1969), vi.

<sup>4</sup>LtCol John Schlight, “Jet Forward Air Controllers in SEAsia 1967-1969” (Headquarters PACAF, project CHECO, 15 October 1969), 2-3, 10-11; and Seventh Air Force, “Commando Sabre Operations,” 31 July 1967.

<sup>5</sup>Maj Merril A. McPeak, Director/Plans, 31 TFW, interviewed by USAFHRA staff, 22-23 March 1971.

<sup>6</sup>Gary R. Lester, *Mosquitoes to Wolves: The Evolution of the Airborne Forward Air Controller* (Maxwell AFB, AL: Air University Press, 1997), 173.

<sup>7</sup>*History, Commando Sabre*, July-September 1967, 23.

<sup>8</sup>Lester, 173.

<sup>9</sup>*History, Commando Sabre*, 31 July 1967; and Schlight, 5.

<sup>10</sup>Lester, 174.

<sup>11</sup>Ibid., 181.

<sup>12</sup>Ibid.

<sup>13</sup>*History, 366th TFW*, July-September 1968, 20.

<sup>14</sup>*History, 8th TFW*, vol. 1, *October-December 1968*, 23-24.

<sup>15</sup>Gary R. Lester interview with Col. Dave Yates, 24 August 1994.

<sup>16</sup>*History, Commando Sabre, 1 April-15 May 1970*, 6-13; *History, 31st TFW*, vol. 1, *April-June 1970*, 39; and *History, 8th TFW*, vol. 1, *April-June 1970*, 31-33.

## CHAPTER 5

### BEYOND VIETNAM: THE DEATH OF LARGE-SCALE AIRBORNE FAC

In the aftermath of Vietnam, the conventional military establishment felt there was no real need for the airborne FAC mission to continue. Cold War reasoning mirrored doctrine from the past, prioritizing deep interdiction missions and strategic bombing over CAS. All Defense Department eyes were focused on the gently rolling hills and farmlands of Eastern Europe, a far cry from the triple-canopy jungle Americans had scoured for the enemy years earlier. American commanders knew the European terrain like their own back yard; and the intelligence structures, as well as the combat forces arrayed, were specifically designed to fight in that environment. Also, the mobile surface-to-air threat was seen as too restrictive for even the bold Fast-FAC of the Vietnam era to survive.

The Soviet nuclear threat and vast conventional mechanized formations rolling west through the Fulda Gap were the enemy, and most agreed they would be easy to spot by the allied intelligence network in place. The airborne FAC was once again forgotten, as it had been before World War II, Korea, and Vietnam.

Throughout the 1970s and 1980s, only the US Marine Corps maintained an active focus on the FAC mission. Not until the early 1990s did the need for large-scale airborne support for ground forces arise. The first true test for airborne FACs since the withdrawal of American forces from Southeast Asia came in 1991 with Operation Desert Storm. The United States and the rest of the world were caught off guard by the 1990 invasion of Kuwait by Saddam Hussein's Iraqi Army, and they quickly sent vast amounts of

personnel and equipment to both contain the aggression and prevent the looming invasion of Saudi Arabia.

Operation Desert Shield was the blocking force that allowed the United States and a large coalition of international forces to build up enough strength to eventually evict Saddam from Kuwait. The Pentagon was forced to rapidly shift gears from preventing a land war in Europe to waging open desert warfare in Southwest Asia. Each service had prioritized the FAC mission in its own way, and scrambled to array their forces to deal with the unforeseen threat.

#### Marine Corps FACs After Vietnam

Only a small contingent of FAC programs survived the aftermath of Vietnam. Marine Corps OV-10 Broncos and OA-4 Skyhawks were used widely throughout the 1970s and 1980s for Tactical Air Control / Forward Air Control Airborne (TAC/FAC(A)) and artillery spotting missions. They acted as FACs and airborne battle managers for Marine units engaged in all aspects of expeditionary warfare.

Marine OA-4 Skyhawk FACs were replaced by the new two-seat F/A-18D Hornet in 1989. They picked up the mission of airborne FAC, abbreviated FAC(A) in Navy and Marine doctrine, assuming the role of coordinator for Marine single-seat F-18A Hornet and AV-8B Harrier CAS aircraft. The proven concept of Fast-FAC F/A-18Ds integrating with Slow-FAC OV-10s fit Marine Corps needs perfectly, and both performed exceptionally throughout Operation Desert Storm in 1991. The combination provided seamless coverage on both the near and far side of the Fire Support Coordination Line (FSCL) for reconnaissance, Air Interdiction (AI), and CAS to ground commanders for Marine Corps combat operations.

Another Marine Corps program that arose from Desert Storm was the concept of helicopter-based airborne FACs. Marine AH-1W Super Cobra and UH-1 Iroquois were used to control fires not only from other attack helicopters, but from fixed-wing platforms as well. Marine helicopter FACs controlled and corrected artillery and mortar fires, including 16-inch Navy battleship gunfire throughout the war.

#### New FACs Emerge: Air Force A-10 and F-16

One of the few positive steps forward in joint air-to-ground cooperation during the 1970s was the A-10 “Thunderbolt II,” fielded by the Air Force in March of 1977. The A-10 was the answer to the problem of confronting armored Russian hardware in their assault towards Western Europe. The A-10 was cheap, effective, and designed from the beginning to kill Soviet tanks close to friendly troops. Air Force TACPs were still attached to Army units, and would be the pivotal players integrating the A-10 into the US Army’s concept of maneuver warfare.

The A-10, commonly referred to as the “Warthog” due to its ungainly appearance, is scheduled to stay in the Air Force inventory through 2020. Its main weapon system is the 30-millimeter GAU-8 “Avenger” seven-barreled Gatling gun, able to fire 3,900 rounds per minute of depleted uranium or high explosive shells. It also carries a vast array of precision and unguided weapons, a laser-targeting FLIR (forward looking infrared) pod, and defensive countermeasures that allow it to survive low and slow over the contemporary high-threat battlefield.

Before Desert Storm, the Air Force recognized the A-10s ability to provide FAC duties, and the OA-10 was born. The OA-10 is the same airframe as the A-10, with the “observation” designation added when a FAC qualified pilot is flying. It contained one

FM radio to communicate with ground forces, as well as one UHF radio to coordinate with AWACS and other airborne CAS assets. However, the most important aspect of the A-10 came with its pilot, whose sole mission was CAS and FAC. All training time was spent practicing CAS missions, and many of the pilots had experience with Army TACPs as ground FACs.

Another use of airborne tactical air control in Desert Storm was the “Killer Scout” program performed by Air Force F-16s from the 4th Fighter Squadron, 388th Fighter Wing located in Hill Air Force Base, Utah.<sup>1</sup> Although often mistakenly referred to as Fast-FACs by aircrew and air planners, these F-16s operated on the far side of the FSCL, directing strike aircraft onto hard-to-distinguish targets well in advance of ground troops.

Weeks into the war, United States Central Command (CENTCOM) planners were surprised to see that relentless AI missions flown against the Iraqi Republican Guard had not produced the attrition levels of enemy troops expected. Just as in Vietnam 20 years earlier, pilots were having trouble finding well dug-in and camouflaged targets in their area of operations, returning home with ordnance or dropping valuable weapons on previously destroyed targets or decoys. Due to the surface-to-air threat, they did not have the authority to descend to altitudes that would allow them to visually spot the enemy, and did not have loiter time to spend in orbit looking for them. Another problem was that proper BDA could not be performed by the aircrew. Most of the ordnance dropped in Desert Storm were unguided dumb-bombs, and no visual recording, such as a Heads Up Display (HUD) or targeting FLIR tape, was able to record the weapon impact.

A CENTCOM special tactics planning cell headed by Air Force Lt. Col. Clyde Phillips looked to Vietnam for the answer and found it.<sup>2</sup> 1960s-era Fast-FAC tactics were

absorbed by 1990s F-16 “Killer Scouts,” a term used to deliberately distance themselves from the close support missions OA-10 FACs were flying on the opposite side of the FSCL. The mission was perfectly suited to the 4th Fighter Squadron, which had 16 pilots with previous FAC experience on the ground with the Army or in the OA-10 as an airborne FAC.

The pilots would overfly prebriefed killboxes, or engagement areas, prior to arriving strike aircraft. By using binoculars and performing momentary excursions below the Air Force mandated altitude limit, Killer Scout pilots would validate Air Tasking Order (ATO) targets and coordinate strikes against them if they were found to be worth destroying. 500-pound MK-82 bombs were used to mark targets, and if the coordinating F-16 was out of ordnance, visual talk-ons were performed.

If Killer Scouts found decoys, empty revetments, or previously destroyed targets, they would send the awaiting aircraft to their secondary targets located in another killbox, or to another F-16 who had found enemy forces.<sup>3</sup> Brigadier General Buster Glosson, a lead Air Force planner for Desert Storm remarked that the Killer Scouts “increased the effectiveness of the F-16 force three- or fourfold.”<sup>4</sup>

The resurrection of the Vietnam-era Fast-FAC mission, however successful for the Air Force-Army team, pointed out a serious problem of disparity and service-specific operations inside the Department of Defense at the time. As the 4th Fighter Squadron was feverishly producing new tactics and validating their seemingly groundbreaking mission, the Marines, located only miles away, were successfully performing the exact same combat duty day after day. They called it Strike Coordination and Reconnaissance (SCAR) instead of Killer Scout, but the mission was exactly the same. OV-10, OA-4, and

later F/A-18D aircrew had perfected the SCAR mission during and after the Vietnam War, yet no air planners outside the Marine Corps knew they had been teaching the tactics for years.

#### New FACs Emerge: Navy F-14 and F-18F

Due to Desert Storm, the United States Navy also saw the significance FACs could play in modern warfare. The F-14 Tomcat saw little action as an air-to-air only platform in the war, and were anxious to capitalize on turning the fighter into the “Bombcat.” Aircraft Carrier deck space was at a premium, and reviving it as a strike fighter would mean more power projection per carrier for the Navy. Tomcat aircrew went to the experts.

Following the Marine Corps F/A-18D FAC model, the Navy sent two Tomcat aircrew in 1994 to the Marine Aviation Weapons and Tactics Squadron One (MAWTS-1), the primary schoolhouse for prospective FACs. That initial cadre of Tomcat instructors soon began teaching the rest of the F-14 community Marine expeditionary warfare and FAC operations. The Chief of Naval Operations certified the Tomcat for FAC(A) duty in 1995, giving every deployed carrier Airwing the ability to control ordnance in close proximity to Army, Marine, SOF, and NATO ground units. The FAC lineage was carried on by the replacement of the Tomcat, the F-18F Super Hornet. The F-18F, a much larger and survivable version of the F-18D, is also a two-seat aircraft, and incorporates a fourth-generation FLIR with helmet mounted queuing.

Along with Marine schooling, the Navy also purposefully absorbed the requirement for all FAC aircraft to have two aircrew. The Marines believed the mission, which undoubtedly could be performed by a single seat aircraft, was too important and

physically demanding for one pilot to accomplish alone safely. Having an extra human in the cockpit would mitigate fratricide, and they were willing to sacrifice quantity of controllers for quality of platform and performance. The Special Operations community agreed as well, leaving single-seat FAC aircraft only in the Air Force.

#### Special Operations Forward Air Control

Smaller FAC contingents assigned to Special Operations units quietly carried on the combat proven legacy of the Vietnam FAC as well. These included H-60 Blackhawk and AH-6 Little Bird helicopters from the Army Special Operations assigned to the 160th Special Operations Aviation Regiment (Airborne). Hurlburt Air Force Base AC-130 Spooky and Spectre gunships were also used as a modified FAC platform, performing missions in Panama and Grenada. SOF aviation assets usually work in close proximity to friendly forces, and rarely rely on outside air support for kinetic effects. SOF airborne FACs were the perfect solution to provide overwhelming firepower on many small unit direct action, insertion, extraction, and combat search and rescue (CSAR) missions in support of SOF personnel.

#### The Next Test: Kosovo 1998

For the first time in military history, all branches of the Defense Department had airborne FACs ready for the 1998 war in Kosovo. The problem was, this time, there were no ground troops to provide close air support for. Not even SOF were allowed into the theater for special reconnaissance missions, yet Navy F-14, Marine F-18D, and Air Force F-16, and A-10 aircraft launched on ATO directed “FAC” and “CAS” missions. How could aircrew provide CAS when there were no ground troops? How does one become an “airborne extension of the TACP” if there is none?

The misnomer baffled FAC aircrew, and again highlighted the underlying misunderstanding of air planners in exercising Joint CAS (JCAS) procedures. Serious differences were brought out in each of the services “stove-piped” training programs, which had Air Force F-16 FAC crews training to one playbook, while A-10 FACs trained to another. Navy and Marine Corps FACs were compatible with each other due to similar MAWTS training and procedures, but serious delays were encountered between Naval aviators and their Air Force counterparts when differences in radios, navigation and targeting gear, procedures, and tactics were identified. Joint training between the services’ FACs was scarce at best, and in most cases nonexistent.

The mission actually performed by the aircrew over Kosovo was technically strategic attack and interdiction, not FAC and CAS. FAC qualified pilots were the best choice for the coordination of large, roaming packages of armed reconnaissance aircraft, but they were not performing the actual FAC mission, and therefore should not have been assigned it on the ATO.

The few FAC qualified pilots in each squadron were needlessly overtaxed for no good reason, performing SCAR / Killer Scout missions any experienced aircrew was qualified for. The aircrew qualification was transposed onto the wrong mission. The culprit was service-specific terms for the same mission and a genuine lack of understanding between aircraft control, which requires a FAC, and aircraft coordination which does not.

#### The Global War On Terror

After 11 September 2001, air planning concentrating on the destruction of the Taliban and Al Queda began quickly. Massed formations of American troops seen in

Desert Storm could not be utilized in the quick invasion of Afghanistan, so Special Operations and CIA paramilitary forces were inserted to bolster the indigenous Northern Alliance.

The destruction of Afghani aircraft, military bases, and air defenses proceeded quickly, and the war soon became a FAC-run air war. SOF leveraged technology as a force multiplier, providing targeting coordinates for new GPS guided weaponry delivered from fighter and bomber aircraft alike. There were fratricide incidents, proving technology is not always the only answer. However, the pairing of ground FACs directly to CAS aircraft or airborne FACs worked very well. The learning curve for both FACs was steep, and both adjusted well to the relatively few FSCMs and the nonlinear state of the battlefield. One of the main factors facilitating success was the relatively low-threat environment in which both FAC and CAS aircraft operated. Sporadic AAA and shoulder-fired surface-to-air missiles were the extent of the enemy defenses.

Many lessons were captured from Afghanistan, especially Operation Anaconda where faulty intelligence and lack of dedicated close air support caused many near-fratricide incidents. If the surface-to-air threat had been more robust, many more lives would have been lost due to the poor C3. More air-to-ground coordination was needed, especially between SOF and conventional FAC and CAS aircraft providing support.

At the initiation of Operation Iraqi Freedom, that coordination was complete. SOF tasked with capturing two airfields in western Iraq on 20 March 2003 had practiced the mission with Air Force and Navy airborne FACs only months earlier in the United States. This reduced the risk to both forces and allowed the mission to be performed inside an

integrated air defense system (IADS), something not present in Afghanistan months earlier.

Other missions including the seizure of numerous presidential palaces and a key dam northwest of Baghdad occurred under similar high-threat circumstances with no losses to ground or air forces. The ground and airborne FAC team also integrated well in southern Iraq for the capture of key oil fields and 5th Corps' push north to Baghdad. The Marine Corps proved yet again the Slow- and Fast-FAC concept, utilizing Cobra, Iroquois, and Hornet FACs to cover I Marine Expeditionary Forces' eastern attack on the capital. In the North, a few hundred SOF and airborne paratroopers tied up Iraqi divisions with the help of CAS missions directed by FACs.

#### Where Do We Go From Here?

One can compile a simple road map to future dominance in integrated joint air-to-ground FAC operations by directly applying the inherent strengths of the battlefield effects of Vietnam-era Slow- and Fast-FACs to our projected future needs. Capturing and implementing hard-won lessons learned from our past is our greatest ally in the future. It is easiest to break down the components of FAC strengths into three separate categories for meaningful insight: the mission, the people, and aircraft.

#### The Mission of Forward Air Control

The most flawed aspect of current rhetoric concerning the future of the FAC mission is that most debate and literature are focused on high-priced airframes, pounds of precision weaponry brought to the fight, and whether the platform should be manned or unmanned. All are critical factors in the determination of future missions, but miss the

most important point to consider: What are the future needs of the airborne FAC customer?

The ground commander, his Air Liaison Officers, and TACP personnel should comprise the heart of debate, not defense contractors and staff air planners. One needs to look no farther than the definition of an airborne FAC, which held true both in Vietnam and present doctrine, to start shaping the answer. FACs are first “an airborne extension of the TACP,” and in combat, what the ground commander or TACP says, always goes.

This debate should be no different. The airborne FAC definition continues:

FAC(A) duties include detecting and destroying enemy targets, coordinating or conducting target marking, providing terminal control of CAS missions, conducting air reconnaissance, providing artillery and naval gunfire air spotting, providing radio relay for the TACP and FAC, and performing BDA.<sup>5</sup>

The Department of Defense sees conventional US and coalition ground forces of the future waging tomorrow’s wars by replacing large numbers of personnel and organic firepower for advanced technology and superior maneuverability. Those forces must be prepared to face an unconventional enemy who will operate in small, lethal units interspersed with the civilian population rather than facing coalition forces with massed formations. The Army’s White Paper on the Concept for the Objective Force states:

Respect for our significant capabilities causes our enemy to forego massed formations in favor of smaller dispersed forces with lethal capabilities targeted against strategically significant symbols to generate confusion and encourage tentativeness in our use of force. . . . The enemy will resort to decentralized, small-unit operations when it perceives that we have the advantage.<sup>6</sup>

This nonlinear scenario of blurred lines of battle and difficulty determining friend from foe resembles very closely what the US military faced in Vietnam.

Airborne FACs from all the services will be pivotal players for aiding dispersed ground forces in all the tasks listed above. The less organic firepower brought to the

battlefield by land forces means the integration of air-delivered fires will become more predominant and complex. Exactly who pulls the trigger should not matter, nor what type of weapon (i.e., GPS, laser guided) is used. What matters is that the effect a ground commander desires be delivered at the right place, at the right time, in the quantity he or she requires.

Smaller, faster, lighter combat units will inhabit tomorrow's battlefield, and they must be prepared to confront all facets of the spectrum of warfare, ranging from stability operations, to guerrilla warfare, to full scale major conventional theater warfare. They must be able to accomplish all these missions simultaneously, and also be able to integrate fully with coalition partners, whose forces might not be as technically advanced as our own. These circumstances are no different than what the soldiers, Marines, sailors, and airmen faced throughout the Vietnam War.

#### The People of Forward Air Control

Surprisingly, the most technologically advanced weapons platform on the battlefield, the American soldier, is receiving the least amount of Defense Department money. Compared to the future advanced fighter aircraft, unmanned aerial combat vehicles, and Army Future Combat Systems (FCS) that will populate the battlefield of tomorrow, the resources pale in comparison.

Another of the large problem is joint interoperability. Today, just as in Vietnam, each service maintains different qualification programs and standards for their FACs, both ground-based and airborne. Some programs comply with NATO STANAG 3797, which defines minimal FAC qualifications, and some do not. Since the conflict in Afghanistan, American TACPs have started modernizing equipment and control

procedures to ensure compliance with JCAS, but old equipment and lack of training on new technology is still a problem.

As in Vietnam, each service still maintains its own controller schoolhouses. The Army and Air Force use Air-Ground Operations School (AGOS) located at Nellis Air Force Base, while Marine Corps and Navy controllers attend Expeditionary Warfare Training Group (EWTG) courses located on each US coastline. Airborne FACs from different services rarely train together, and if they do, it is coordinated at squadron operations department levels and below. In many instances, the first joint operations a FAC participates in are combat operations or large-scale, live-fire exercises.

One of the easiest ways to enhance joint interoperability is the establishment of a joint curriculum taught at all the FAC schoolhouses. This joint core course would be followed by any service-specific training programs deemed necessary by specific branches. Also, local area and deployment training plans should widen their focus to involve joint or multinational partners that could participate in US combat actions.

#### The Aircraft of Forward Air Control

Airborne FAC tactics and procedures are not only driven by the ground forces FACs work for, but the aircraft they fly and threat in which they operate. None of these factors have changed significantly since the Vietnam War. When surface-to-air threats become more lethal, the aircraft are produced that are more survivable. When information containing friendly and enemy updates become too complex to broadcast via radio, secure datalinks speed the process. There have been no military revolutions in the arena of forward air control to this date, although many have argued the point.

Vietnam-era Slow- and Fast-FACs shared three primary strengths still applicable to airborne FACs today: First was the ability to clearly understand and communicate the ground commander's intent to each CAS aircraft. Second, both could directly manage the airborne fight in their area of operations through familiarity with established ROE, CAS aircraft, ordnance effects, and target matching in close proximity to friendly forces. Third, both types of FACs infused direct, real-time intelligence back into the established information network, spreading the wealth of usable information to other strike assets.

The most important aspect when considering FAC airframes is recognizing the potential effects it could bring to the battle. The Vietnam Slow-FAC family of airframes offered cheap, dependable forward battlefield persistence, excellent 360-degree visibility of the surrounding environment, and precise marking and small-scale destruction. The Fast-FAC airframe brought survivability through speed and technology, the ability to affect more areas in a dispersed battlefield, and enough organic ordnance to quickly influence fleeting targets. The airborne FACs of today and tomorrow must capitalize on these proven strengths, no matter what the aircraft looks like or what service it flies for.

### Conclusion

It would be a gross understatement to say the airborne FAC will be a useful tool on tomorrow's battlefield. The FAC will provide any mission ranging from reconnaissance for stability operations to controlling CAS on high-threat counter-weapons of mass destruction missions for SOF. All that is needed is integration and connectivity to the ground commander's intent and purpose.

For the near future, a manned airborne FAC platform will be absolutely crucial to combining airborne and surface-based lethal and nonlethal effects. The technology

available today and in the next few years will not surpass the direct human interface of a FAC overhead the battle, but a time will come when mechanization will enable the FAC to fight from a UAV console. Until then, train FACs in a joint environment, let them practice together, and as history taught, do not forget the lessons from the past.

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<sup>1</sup>LtCol Mark A. Welsh, “Day of the Killer Scouts,” *Air Force Magazine*, April 1992, 34.

<sup>2</sup>Ibid.

<sup>3</sup>Ibid.

<sup>4</sup>Ibid.

<sup>5</sup>*Marine Aviation Weapons and Tactics Squadron One FAC(A) Handbook*, 12 March 2002, 3.

<sup>6</sup>*White Paper, Concept for the Objective Force, Concept Summary*, 2.

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